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Financial Analysis of Trina Solar Company

Finanční analýza společnosti Trina Solar

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3. Financial Characteristics of Trina Solar Company
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Bibliography
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List of Annexes
Annexes

References:

BREALY, R. A., S. C. MYERS and F. ALLEN. *Principles of Corporate Finance*. 9th ed. New York: McGraw-Hill, 2008. 978 p. ISBN 978-007126327-6.
EHRHARDT, Michael C. and Eugene F. BRIGHAM. *Corporate Finance*. 4th ed. New York: South-Western College, 2010. 848 p. ISBN 978-1439078082.
HARRISON, W. T., Ch. T. HORNGREN and B. THOMAS. *Financial Accouting*. 8th ed. New York: Prentice Hall, 2009. 960 p. ISBN 978-0136108863.

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The declaration

"Herewith I declare that I elaborated the entire thesis, including all annexes independently."

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Contents:

1. Introduction

This thesis is describe about financial analysis methodology, and use these financial analysis methods to calculate the data we get from the selected company. From financial analysis, we analysis if the company have ability to face financial problem and does the company have some problem, we will use the date we calculate and different method to manage the company. We will know if the company need to improve the financial environment. All the companies do not leave working capital, and sometimes is leak of money. We summery all financial activities and get financial report.

The aim of this thesis is using common size analysis, financial ratio analysis and pyramidal decomposition to analyze the financial health of Trina solar from 2010 to 2014.

This thesis is divided by 5 chapters. First chapter is the introduction of the thesis. Second chapter is describe the method and financial analysis. Third chapters is Trina solar company and common size analysis about Trina solar company. Fourth chapters is calculate and analysis about financial ratio analysis. Last chapter is the conclusion of this thesis.

In chapter two, we has two part. First part is what the financial report is and what does it mean. Its important to get the meaning of balance sheet, income statement and cash flow. Second part is financial analysis, we use common size analysis, financial ratio analysis and Dupont analysis. Common size analysis has vertical common size analysis and horizontal common size analysis, that is two different ways to know if the company have working capital. Financial ratio analysis has four different methods, liquidity ratio, activity ratio, solvency ratio and profitability ratio. We use it to measure company's ability in financing. Dupont analysis is use pyramidal decomposition about ROE and ROA to get what the factor of working capital.

In chapter three, first is introduce the company that have been selected, about Trina solar company's history and structure. The Trina solar have their competitor, so we have the competition about the company. Second, the annual report in 2010 to 2014, these annual report we use to calculate vertical common size analysis and horizontal common size analysis.

In chapter four, we make the Tab and Chart to show the result of financial ratio, we get

it in percentage, the four mainly ratio we use is what we mention in chapter two. We use the data we get to find which side of the company they need to improve, the decrease and increase we compare in the five years is the trend about company's financing. Not only financial ratio analysis in this chapter, but also has Dupont analysis, we use method of gradual changes to calculate the factor in pyramidal decomposition.

2. Description of the financial analysis methodology

Financial analysis is a kind of methods to analysis if the company have process of selecting and evaluation the financial data. First, we need to know how to summarize the data about a company, so I will introduce the financial statement, three main statement is balance sheet, income statement and cash flow statement. Second is two different financial analysis, common-size analysis and financial ratio analysis.

Financial statement is the basic of financial analysis, is a formal record of the financial activities of a business, person, or other entity. Record assets, liabilities and equity, income, revenues and costs. Sometimes company will meet some problem in working capital. Financial analysis is useful for company to evaluate company´s operations and management, to make the working capital at the maximize, and if the company' s assets is value. Use the information in the reports and calculate to analysis, and in this chapter will introduce this ratio.

2.1 Financial statement

Financial statement also called financial report, managers will get information from these report at a given of time or period of time, it can help investors and creditors make economic decision. The statement includes balance sheet, income statement and cash flow statement. So it is important to get these kinds of statement, and in my opinion, not only managers need this, but also employees and shareholders need to know how a company developed in a period of time.

2.1.1 Balance sheet

Balance sheet is a kind of financial statement that summarizes a company's assets, liabilities and shareholders' equity at a specific point in time. The mix of capital used for financing assets. If the left side equal to the right side, it means that is on break even point, it's called break down balance sheet. We can talk about balance sheet in two part, first is about asset and second is about liabilities and equity. The balance sheet equation is that total

assets equals liabilities plus owner's equity. The balance sheet is shown in Tab.2.1

Tab.2.1 An example of the balance sheet

Assets	**Liabilities and shareholders' equity**
Current assets	**Current liabilities**
Cash and cash equivalents	Commercial paper
Receivables	Accounts payable
Inventories	Accrued liabilities
Prepaid expenses and other	Accrued income taxes
Total current assets	**Long term liabilities**
Fixed assets	Long term obligations
Land and goodwill	Deferred income taxes and other
Fixtures and equipment	**Equity**
Intangible assets	Preferred stock
Long term investment	Common stock
Total fixed assets	Capital in excess of par value
Total assets	Retained earning
	Total liabilities and shareholders' equity

Source: Thomas R. Robinson,CFA , 2009

In the balance sheet, the basic equation is computed as:

$$Assets = Liabilities + owner's\ equity\ . \tag{2.1}$$

Look the main content of the balance sheet, we will understand the firm's assets, liabilities and shareholders' equity of each objective and it's internal composition at the first time. Because the total assets of the enterprise reflects the enterprise's scale of operation and its change with the change of the corporate debt to equity. When the enterprise shareholder rights and interests rate is growth higher than the growth of the total amount of assets, that mains enterprise financial become strength then before. Assets, liabilities and shareholders'

equity are each comprised of several smaller accounts that break down the specifics of a company's finances. A balance sheet account that represents the value of all assets that can reasonably expected to be converted into cash within one year.

The financial analysis need accurate data, we can get the data from these kinds of sheet, provide basic information like assets in different use, and the debt. It has current assets and fixed assets, long term liabilities and current liabilities. As for current assets and current liabilities is analysis the liquid of the company assets. Long term assets and long term liabilities is quite stability. So it means different ability need different data.

Current assets include cash and cash equivalents, accounts receivable, inventory, marketable securities, prepaid expenses and other liquid assets that can be readily converted to cash. Cash and marketable securities is the most liquid assets, are in the form of cash or can be quickly converted into cash at a low cost. Inventories, like holding raw material, work in process and finished goods. The speed with which inventory is turned into cash depends on the sector in which the company operates. Account receivables is when the goods is sold on credit, customers makes the payments on the credit sales, the accounts receivable are converted into cash. Each company need current assets and need to manage the current assets.

Long term assets is also called fixed assets, it means that the assets is stability and is more than one year in company's stock. It also a big part in balance sheet, it decided how much ability a company has to spend the crisis when it meet problem. Long term assets recorded the price which they were purchased and do not always reflect the current value of the assets. It's include goodwill, equipment and property, intangible assets and long term investment.

Liabilities has current liabilities and long term liabilities. Current liabilities is all the short-term capital sources, that have maturities of one year or less, company is in the position of the debtor. Accounts payable is when the company buys goods or services on credit, which is payable in one year or less.Short term notes is all the bank credits and loans payable within one year.Long term liabilities includes long term borrowing, bank loans and other long term investment.It's obligations of the company that become due more than one year into the future.

Equity represents the shareholder´s investment or capital belonging to the owners or

shareholders of the company, contribution by the owners or by company´s profit.Equity is the company's payments made to its shareholders, it is the portion of corporate profits paid out to shareholders. Equity includes sum of common shares, sum of preferred shares, retained profits and profit of the current year.

2.1.2 Income statement

Income statement reflect the operating results of the enterprise for a certain accounting period and the distribution of accounting statements, is the financial records of the company operating performance over a period of time, reflects the sales revenue of this period of time, cost of sales, management fee and tax status, the results of the reports tell us the company get profit or get loss. The income statement is shown in Tab.2.2

Tab.2.2 An example of the income statement

Revenues
Costs of services
Gross profit
Selling, general, and administrative
General and administrative expenses
Operating profit
Other operating income and expenses
Earnings before interest and taxes
Income taxes
Income before minority interest
Minority interest
Net income

Source: Thomas R. Robinson,CFA , 2009

In the income statement, the basic equation is computes as:

$$Revenue - Costs = net\ income/loss. \quad (2.2)$$

$$Operating\ costs + Financial\ costs = EBT. \quad (2.3)$$

It's compare the revenue and cost of the company, so income statement also called profit/loss statement. It means that the profit and loss is what the company pay attention to.

Two main subtotal need to calculate: operating activities and financial activities. Operating activities has operating revenues and operating costs. The revenues are from sale of products, goods, and services. Operating costs includes raw material consumption, electricity consumption, depreciation, costs of good sold, salaries and wages paid to employees, administrative costs, other operating costs.

Financial activities has financial revenues and financial costs. Financial revenues is interests received and revenues from owned securities. Financial costs is interests paid and coupons paid in a company. Sum of operating costs and financial costs is earning before tax.

2.1.3 Cash flow statement

Cash flow statement provides information about company´s cash inflows and cash outflows during a period, often a year. That shows how changes in balance sheet accounts and income affect cash. The analysis is take place after operating, its has investing and financing activities. It is different between income statement, it correspond exactly to the actual cash flows collected form sales, and the profit is not the same as income statement. If a company has no cash flow, the company will bankrupt.

When we talk about cash flow, it has cash inflow and cash outflow. We can divide cash flow about cash flow from operating activities, cash flow form investing activities and cash flow from financial activities. The cash flow statement is in Tab.2.3

Tab. 2.3 An example of the cash flow statement.

Operating activities
Cash receipts from customers
Cash paid for
Inventory purchases
General operating administrative expenses
Wage expenses
Interest and income taxes
Net cash flow from operations
Investing activities
Cash receipts from
Sale of property and equipment
Collection of principal in loans
Cash paid for
Purchase of property and equipment and securities
Making loans to other entities
Financial activities
Cash receipts from issuance of stock and borrowing
Cash paid for
Repurchase of stock
Repayment of loans
Dividends
Net cash flow from financing activities

Source：*Source: Thomas R. Robinson,CFA , 2009*

Cash Flow from operating activities includes inflows and outflows from day-to-day company´s activities, cash inflow include cash sales of goods, products or services, collection

of receivables. Cash outflows is cash payments for inventory, salary and wages payments, taxes and paying payable. Cash flow from investing activities has purchase or sale of an asset , loans made to suppliers or received from customers, payments related to mergers and acquisition. Cash flow in financial activities include the inflow of cash from investors such as banks and shareholders, and outflow of cash to shareholders. Other activities which impact the long-term liabilities and equity of the company are also listed in the financing activities section of the cash flow statement.

Reporting cash flow from operating activities has direct and indirect methods, the methods of calculation is different. The direct method for creating a cash flow statement reports major classes of gross cash receipts and payments, this shows only cash payment of the form of inflows and outflows. Indirect methods is the cash flow form income statement and then adjustment.

2.2 Common size analysis

Common size analysis is use the data in financial statement and then analysis, it is important for company to know if the working capital is enough. If meet financial crisis, the can get out of financial trouble quickly. A common-size financial statement is just display line items on a statement as a percentage of the data. Using common-size financial statements helps investors know the trends that a what the financial statement looks like at first. It has two method of common size analysis Vertical common size analysis and Horizontal common size analysis.

2.2.1 Horizontal common size analysis.

Horizontal analysis focus on trends and changes in financial statement items over time. Horizontal analysis can help a financial statement user to see relative changes over time and identify positive or perhaps troubling trends. This analysis is useful for comparing different periods of time because a reference point corresponding account in the statement.

In which we use the accounts in a given period as the benchmark or base period and restate every account in subsequent periods as a percentage of the base period's same account. Horizontal common-size analysis is a time-series analysis and is useful for identifying trends and growth in account over time. The horizontal common size analysis can computed as:

$$Absolate\,change = A_i - A_{i-1} \quad (2.4)$$

$$Percentage\ of\ base = \frac{A_i - A_{i-1}}{A_{i-1}} \cdot 100\% . \quad (2.5)$$

From the function we know we can calculate at the absolutely change or relative change in a period of time.

2.2.2 Vertical common size analysis

Vertical common size analysis shows each item on a statement as a percentage of a base figure within the statement, it can compare the data of the company over time, it's usually pay attention on internal part of the company.

This method analysis the data in balance sheet we can get. And income statement, sales figure is generally used as the base and all other components of income statement are shown as a percentage of sales. Vertical analysis states financial statements in a comparable common-size format. We always analysis in investment and financing, because we use the resulting percentages to make comparisons across companies, Like how profit margins have changed over time by examining gross profit as a percentage of revenues over succeed periods. The vertical analysis can computed as：

$$\Delta X = \frac{X_i}{X_{i-1}} . \quad (2.6)$$

That denominator is amount of individual item, and member is amount of based data. This kinds of change is the percentage's change.

2.3 Financial ratio analysis

Financial ratio analysis is about how to use financial account and use some information to evaluate the financial status, the satisfaction one gets from tearing apart a companies financial statements and analyzing it on a whole different level. Different ratio introduce different function of analysis, it determining how many capital does the the company need and how to development in each department. Each department care about their work, need to analysis.They can be used to evaluate the produced by all of a company's efficiency on the use of it's assets, like a turnover ratio compares a measure of out put to the investment used to generate that output.

This part we have liquidity ratio to measure company's ability to meets it's immediate and short term obligations, activity ratios to measure the efficiency of assets usage, solvency ratios to measure company's ability to meets its long term obligations and profitability ratios to measure the efficiency of assets usage.

2.3.1 Liquidity ratios

In this part, liquidity ratio is measures company's ability to meets its immediate or short term liabilities and obligations. If the liquidity is good in the company, it's will easily to converted into cash quickly is liquidity assets. These assets and liquidity can listed in financial report. These assets are listed in financial statements as current assets. These liquidity ratios reflect a company's position at a point in time and ,therefore, typically use data from the ending balance sheet rather than averages. The current,quick and cash ratios reflect three measure of a company's abilities to pay current liabilities.

Current ratio describe the current ratio is lower means the company rely on operating cash flow and financial with finance with other company to satisfy short term liability. This liquidity influence company take the ability about liabilities. And current ratio suppose that inventories and accounts receivable is liquid. The current ratio can be defined as:

$$Current\ ratio = \frac{current\ assets}{current\ liabilities}. \tag{2.7}$$

In these kinds of case the ratio is assets divided by liabilities, how cash conversion ability is determined on this ratio.

Quick ratio is an indicator of a company's short-term liquidity. It measures a company's ability to meet its short-term obligations with its most liquid assets. Its important that the ratio excludes inventories from current asset. When you calculate quick ratios, you will find that is more conservative than the current ratio because it includes only the more liquid current assets in relation to current liabilities. The formula of quick ratio is

$$Quick\ ratio = \frac{current\ assets - inventories}{current\ liabilities}. \qquad (2.8)$$

It's more stringent test of company's liquidity, current assets are adjusted for inventories due to the fact, that it is generally less liquid.

Cash ratio is when a individual company meet crisis problem, it will influence the liquidity of the company. To deal with this problem, we need to calculate in cash ratio to pull through the trouble. High marketable short term investments and cash are included, a strong cash ratio is useful to creditors when deciding how much debt, if any, they would be willing to extend to the asking party. The calculation about cash ratio is:

$$Cash\ ratio = \frac{cash + short\ term\ marketable\ investment}{current\ liabilities}. \qquad (2.9)$$

All this ratio we can see, the larger these liquidity ratios are, the better the ability of the company to satisfy its immediate obligations. Just think about current ratio to analysis liquidity, we need to make a company have more current assets and current liabilities, it means more profitability and chance we have. Through this ratio, we know how to make liquid in company short operating cycle.

2.3.2 Activity ratios

As we know, activity ratios measure the efficiency of assets usage. Generally, managers make management plan, than use activity ratio to analysis how well the managers

work. Activity ratios are analyzed as indicators of working operational part, like how effectively assets are used by a company. It influence efficiency management of both working capital and long term assets. How to calculate activity ratios, we talk in turnover and operating cycle mainly, turnover ratio compares a measure of output to the investment used to hoe many output it is.

Inventory turnover is important in activity ratio, its investment objective and the portfolio manager's investing style will play an important role in determining its turnover ratio. It's data is from balance sheet, like asset, liabilities and equity. Inventory turnover is effected by cost and inventory, is provide inventory relative to the speed at which sold, always in a period of time. The inventory turnover can be computed as :

$$Inventory \quad turnover = \frac{cost\ of\ goods\ sold}{average\ \ inventory}. \tag{2.10}$$

Is a kinds of conversion ability that current assets use in inventory, that a company can't have too much inventory to store, it will make working pressure.

Receivables turnover are receivables collected during the period, is the number of times accounts receivables have been created through the sale of goods on credit, customer pay on credit is a kinds of receivables. Although limiting the number to sales made on credit would be more appropriate, credit sales information is not always available to analysis. The receivables turnover can be computed as:

$$Receivable\,turnover = \frac{total\ revenue}{average \quad receivebles}. \tag{2.11}$$

the highly the receivables turnover is , the highly efficient credit and collection the company has. And if the receivables turnover ratio is low, it would typically raise problem about efficiency of the company's credit and collections procedures. With inventory management, company's sales growth relative to the industry can help the analysis assess.

Total asset turnover is the ratio of revenues to total assets. This ratio means that total assets investment influence revenues. To measures the total ability to generate revenue and what the assets level is. It is an efficiency ratio which tells how successfully the company is

using its assets to generate revenue. Total assets include current assets and fixed assets. So it will depend the produce of the product and the development of each part. The formula:

$$Total\ asset\ \ turnover = \frac{total\ revenue}{avereage\ total\ assets}. \qquad (2.12)$$

How much revenue is in the average total assets is total assets turnover, and it is useful for managers to evaluate the part of revenue.

Fixed asset turnover measure how efficiently the company generates revenues from its investment in fixed assets. The higher fixed asset turnover, the more efficient use of fixed assets in revenue. The lower the fixed asset turnover is , the less efficient use of fixed assets in revenue. The formula of fixed asset turnover is:

$$Fixed\ assets\ \ turnover = \frac{sales\ revenue}{net\ \ fixed\ assets}. \qquad (2.13)$$

So its the ratio of sales revenue and net fixed assets, we can calculate by this formula, and have a analysis.

Working capital turnover is depend on working capital , it is defined as current assets minus current liabilities. It measure how efficiently the company generates revenue with its working capital. It is the relative proportion of an entity's current assets to its current liabilities, and is intended to show the ability of a business to pay for its current liabilities with its current assets. The formula of working capital turnover as follow:

$$Working\ capital\ turnover = \frac{total\ revenue}{average\ working\ capital}. \qquad (2.14)$$

The working capital ratio can be misleading if a company's current assets are heavily weighted in favor of inventories, this current asset can be difficult to liquid in the short term.

Payable turnover ratio is high relative to the industry, the result of this ratio can obvious if the company take advantages in it payable account. The payable of a company is influence the total assets, because that you must take a part of assets to pay. The high payable could trouble making payment on a period of time. The definition of account payable

turnover is measure a short-term liquidity used to quantify the rate at which a company pays off its suppliers.The formula of payable turnover is as follow:

$$Payable\,turnover = \frac{cost\ of\ goods\ sold}{average\ payable}. \tag{2.15}$$

Accounts payable turnover ratio is calculated by taking the total purchases made from suppliers and dividing it by the average accounts payable amount during the same period.

Number of days of payable is relative about balance sheet, mainly on liabilities, this is how much a company should pay for some obligations, always in short term. And is measures how many times a year the company payoff all debts. As for company pay on credit. The formula:

$$Number\ of\ days\ of\ payable = \frac{accounts\ payable}{average\ day's\ purchases}. \tag{2.16}$$

$$Number\ of\ days\ of\ payable = \frac{accounts\ \ payable}{purchases/365}. \tag{2.17}$$

It is depend on total account payable and average days. How long does it take a company,and how long buying in credit to paying for it in cash.

Number of days of receivable is a customer accrued payable before it is collected. The propose of measurement is to know if the company's credit is availability. And have more great reputable customer, it can improve the ability to collect cash from them. Mainly the collection of the account receivable in cash. In balance sheet, the receivable is calculate at the end of year. The ratio can be computed as：

$$Number\ of\ days\ of\ receivable = \frac{accounts\ receivable}{average\ day's\ revenue}. \tag{2.18}$$

As we can see, it depend on accounts receivable and average days

The **operating cycle** is measure the time that the activity take, how long does the cycle is influence the collection, and its depend on inventory and receivable, operating cycle is the

number of days a company takes in realizing its inventories in cash, how efficiency and management of the company. We can computed as:

$$Operating\ cycle = number\ of\ days\ of\ inventory + number\ of\ days\ of\ receivable. \quad (2.19)$$

Combine operating cycle and number of days of payable, we can get net operating cycle, it is the net cash in payable account. And net operating cycle can be as followed:

$$Net\ operating\ cycle = operating\ cycle - number\ of\ days\ of\ payable. \quad (2.20)$$

2.3.3 Solvency ratios

Solvency ratios measure company´s ability to meets its long-term obligations , sometimes called financial leverage ratios, because its measure the method of company financed. When we describe solvency ratios, we must describe business risk and financial risk. This two types of risk influence solvency ratios, in operating management, company will have debt, when we have debt that means we meet risk. We use solvency ratios to assess a company's level of financial risk. Here have component percentage solvency ratios and coverage ratios.

Debt-to-assets ratio, measures the percentage of total assets financed with debt, measures the financial leverage of a company. If the liabilities is higher to compared with assets the leverage is higher and company will have more bank risk.The ratio can be computed as:

$$Debt\ ratio = \frac{total\ debt(total\ liabilities)}{total\ assets}. \quad (2.21)$$

As you can see, its what percentage of the company's assets is financed by debt. How much many the company will pay for debt can calculate by this formula, the debt make company working difficult in a period of time.

Debt-to-equity ratios, measures the amount of debt relative to equity. That you must know, different industry has different debt to equity ratio standard, as some industries are more likely to use more debt financing. A lower debt to equity ratio shows that the finance is

more stable. Companies with a higher debt to equity ratio are considered more risky to creditors and investors and lower ratio is less risky. The formula is as follow:

$$Debt\ \ to\ \ equity\ \ ratio = \frac{total\ debt}{total\ shareholders'\ \ equity}. \tag{2.22}$$

How much debt in total equity influence shareholders' benefit, the debt is higher, the less shareholders' will get. The structure of debt need to adjust in each different period.

Financial leverage ratios is the relationship between assets and equity, using this tool, we will make investment become more and more, whatever the result is loss or get profits, it will grow in a stable proportion. So, investors must analysis the risk in investment project. Like make expect rate of return less and make expect risk higher. The formula shown as:

$$Financial\ \ leverage = \frac{total\ assets}{total\ shareholders'\ \ equity}. \tag{2.23}$$

It also use of debt relative to equity in financing the company, the greater the financial leverage ratio will be.

Interest coverage ratios measures about how debt is related to assets or equity, debt must has deep related on assets and equity, the ratio is the company's ability to debt. We use it to analysis if the earning before tax can cover interest payments, and how many times dose it cover. The higher it is, means that the strong solvency ratio we will get. The interest coverage ratio is determine how easily a company can pay interest expenses on outstanding debt. The formula can be:

$$Interest\ \ coverage\ \ \ ratio = \frac{earning\ \ before\ \ interest\ and\ taxes}{interest\ \ payment}. \tag{2.24}$$

It is calculate by dividing a company's earning before interest and taxes by the company's interest expenses for the same period.

Fixed-charge coverage ratio is a financial ratio that measures a firm's ability to pay all fixed expenses before interest and income taxes. It is useful for fixed cost, like lease payment, insurance payments and dividend payments. This ratio relates fixed charge, and cash flow by

the company. So we need cash flow statement to analysis this ratio. It measures if the company's earning can cover the company's interest and payment, and the time of it. The same, the higher the ratio is, the strong the solvency will have. The formula can be computed as:

$$Fixed\text{-}charge\ coverage\ ratio = \frac{earning\ before\ interest\ and\ taxes + lease\ payment}{interest\ \ payments + lease\ payments}. \quad (2.25)$$

It is depend on earning before interest and taxes, lease payments divided by interest payment and lease payments.

Cash flow coverage ratio is the number of times that financial obligations are covered by earning before interest and taxes. For example, banks use the cash flow coverage ratio to help if get credit in this company next time. When we calculate cash flow coverage ratio equal to or greater than one indicates that the debtor is able to service the debt in its profit. The formula shown as:

$$Cash\ \ flow\ coverage\ ratio = \frac{cash\ \ flow\ operations + Interest\ \ payments + tax\ \ payments}{interest\ \ payments}. (2.26)$$

Use these ratios, we can assume that the length of time it would take for the company to repay its debt if it were to apply all of it. Solvency ratio is a measure of the risk an insurer face, but not only in insurance company, different part of company meet different methods to analysis the ability to the payment of debt. Debt ratios are focus on balance sheet and the amount of debt. Coverage ratio is focus on income statement and measure. As to calculating solvency, net income includes all cash and assets that can be easily liquidated.. We know about this ratio shows that the degree of financial leverage is the business, including short-term and long-term debt.

2.3.4 Profitability ratios

Profitability ratios measures the ability to generate profit from invested capital in the form of return during a period. The higher the profitability ratios, the better competitive position of the company. Profitability ratios used to determine the company's return to its investors. It is important to company managers and owners. If a small business has investors who have put their own money into the company the primary owner certainly has to show profitability to those equity investors. Margin is the firm's ability to sales and get profit.

Gross profit margin looks at cost of goods sold as a percentage of sales. You will know how well a company controls the costs of its inventory and the manufacturing of its products and subsequently pass on the costs to its customers. The higher gross profit margin, the higher product pricing and lower product costs. It also affect by competition, if a company have ability to have a competition, the more gross profit margin a company charge, and less cost spend. The formula can be:

$$Gross\ profit\ margin = \frac{gross\ profit}{total\ revenue}. \tag{2.27}$$

We use gross profit divided by total revenue, and get how much the gross profit margin.

Operating profit margin is measures the operating efficiency, the data comes from income statement. It is also know as earning before taxes and interest, and has relative with gross margin operating costs. That is why it increase quickly than gross margin and can controlling operating costs, such as administrative. The formula can be shown as:

$$Operating\ profit\ margin = \frac{operating\ income}{total\ revenue}. \tag{2.28}$$

The higher the operating profit margin, the working capital operating is more efficiency and the profit will increase per product.

Net profit margin is the ratio of net income to revenues. When doing a simple profitability ratio analysis, we often use it. The net profit margin shows how much of each

sales shows up as net income after all expenses are paid. The net profit margin measures profitability after consideration of all expense including taxes,interest and depreciation. It could be computes as:

$$Net\ profit\ margin = \frac{net\ income}{total\ revenue}. \tag{2.29}$$

Pretax profit margin is pretax income calculate as operating profit. This ratio influence profitability of leverage and other income and expenses. Investors and analysts typically evaluate a company's pretax margin because of time passed, and find the way to increase it to use a kind of measure. When we get the result of the relative performance, we can compare with other competitors. The ratio can be shown as:

$$Pretax\ rofit\ margin = \frac{earning\ before\ taxes}{total\ revenue}. \tag{2.30}$$

Return on assets is use to evaluate the profitability of company relative to its total assets useful indicators. The method of calculation for the company’s annual earnings divided by total assets. Some people calculating the return on net income plus interest, to obtain return on operating prior to the deduction of the cost of borrowing. The shareholders and creditors fund the assets. So return on assets measures the enterprise, regardless of funding sources, the ability to create value for shareholders and creditors. It can be computed as:

$$Return\ on\ assets = \frac{EBIT}{total\ assets}. \tag{2.31}$$

Return on equity is how much net income that equity has. Shareholder is a part of the investment it is the owner's equity, the other part is the enterprise to borrow and temporary occupy.Enterprise the appropriate use of financial leverage can improve the efficiency of the use of money, borrowed too much money will increase the financial risk of the enterprise, but generally can improve the profit. Return on equity is one of the important financial methods about if shareholders’ assets efficiency to use . The formula shows as:

$$Return\ \ on\ \ equity = \frac{EAT}{equity}. \tag{2.32}$$

Profitability ratio is an analysis can instantly tell whether a company is profitable based on net income

2.4 Dupont analysis

Dupont analysis enables to analyze what drives the value of financial ratios which factors have impact in its value. The bases is financial ratios between the balance sheet and the income statement. We can see the company's returns over times or returns into their components. ROE measures the return a company generates on its equity, the fundamental example of the pyramidal decomposition is the DuPont analysis and decomposition of ROE ratio by three component ratios. The formula is defined as follows:

$$ROE = \frac{net\ \ profit}{equity} \tag{2.33}$$

$$ROE = \frac{net\ income}{revenue} \cdot \frac{revenue}{total\ assets} \cdot \frac{total\ assets}{equity} \tag{2.34}$$

In this formula, net income/revenue=net profit margin, revenue/total assets=assets turnover, total assets/equity=financial leverage.

ROE is a function of a company's ROA and its use financial leverage. How much revenue a company generates per one money unit of assets. Note that ROA is decomposed into these two component:net profit margin and asset turnover.

$$ROA = \frac{net\ income}{average\ \ shareholders'\ \ equity}. \tag{2.35}$$

$$ROA = \frac{net\ income}{revenue} \cdot \frac{revenue}{average\ total\ assets} \cdot \frac{average\ total\ assets}{average\ shareholders'\ equity}. \quad (2.36)$$

$$ROA = \frac{net\ income}{EBT} \cdot \frac{EBT}{EBIT} \cdot \frac{EBIT}{revenue}. \quad (2.37)$$

In this formula net income/ EBT is tax burden, EBT/EBIT is interest burden, EBIT/revenues is EBIT margin. Dupont analysis is made through financial ratios between the balance sheet and the income statement. Is a measure of the management and how its useful for investors, if we don't make ROE in three part, investors will get more risk. If the ROE increase a great sign company will meet. If a company's ROE goes up due to an increase in the net profit.

2.4.1 Method of gradual changes

The method of gradual changes enables to quantify the change in the basic ratio caused by the change in the component ratio. In the case of decomposition with 3 component ratios:

$$\Delta x_{a1} = \Delta a_1 \cdot a_{2.0} \cdot a_{3.0}, \quad (2.38)$$

$$\Delta x_{a2} = a_{1.1} \cdot \Delta a_2 \cdot a_{3.0}, \quad (2.39)$$

$$\Delta x_{a3} = a_{1.1} \cdot a_{2.1} \cdot \Delta a_3. \quad (2.40)$$

And describe the symbols: x is the basic ratio, Δx is absolute change in the basic ratio, A *is* component ratio, Δa is absolute change in the component ratio, Δx_{a1} absolute change in the basic ratio caused by the change in the first component ratio

2.4.2 Logarithmic decomposition method

About logarithmic decomposition method, we know that this is the method enables to analyze indicators, the change have caused change in the basic ratio , the component we use one formula to calculate the method, the formula can be shown as follow:

$$\Delta x_{a1} = \frac{ln\, I_{a1}}{ln\, I_x} \cdot \Delta x\,. \tag{2.40}$$

Symbols: I_x is index of change in basic ratio, the formula is $I_x = \frac{x_1}{x_0}$ and I_a is the index of change in component ratio, the formula is $I_a = \frac{a_1}{a_0}$.

2.4.3 Functional decomposition method

The functional decomposition method works with the relative changes in basic and component ratios, and it is the relative changes, the relative change of x and a can be computed as：

$$\Delta x_{relative} = R_x = \frac{x_1 - x_0}{x_0}, \tag{2.41}$$

$$\Delta a_{relative} = \frac{a_1 - a_0}{a_0}. \tag{2.42}$$

Impact of the functional decomposition method on the basic ratio can be calculated:

$$\Delta x_{a1} = \frac{1}{R_x} \cdot R_{a1} \cdot (1 + \frac{1}{2} R_{a2} + \frac{1}{2} R_{a3} + \frac{1}{3 R_{a2} R_{a3}}) \cdot \Delta x\,, \tag{2.43}$$

$$\Delta x_{a2} = \frac{1}{R_x} \cdot R_{a2} \cdot (1 + \frac{1}{2} R_{a1} + \frac{1}{2} R_{a3} + \frac{1}{3} R_{a1 Ra3}) \cdot \Delta x\,, \tag{2.44}$$

$$\Delta x_{a3} = \frac{1}{R_x} \cdot R_{a3} \cdot (1 + \frac{1}{2} R_{a1} + \frac{1}{2} R_{a2} + \frac{1}{3} R_{a1} R_{a2}) \cdot \Delta x\,. \tag{2.45}$$

3. Financial characteristics of Trina Solar Company

About this chapter, it will introduce the financial characteristics of selected company, the selected company Trina Solar Limited company. We always use financial analysis to analyze if a company have reasonable management, but it's important to put company's characteristics to analysis methods. So we need to know company profile and use financial statement, and common size analysis of Trina Solar. We have two part in this chapter.

3.1 Company profile

When we mention profile, history, structures and business is what we need to describe. In the first part includes: history, structures and business.

Trina Solar is inspired by the growth of global solar PV industry(a kinds of solar technology) and the United States company, the company use high quality grid and off-grid photo voltaic modules to all over the world state of civil, commercial, industrial and large-scale public facilities clean and reliable solar energy. Company development toward the photo voltaic industry and extend parity power and to promote the use of solar energy, in these years the company made great achievements.

It is useful for all over the world to develop solar energy. As for our communities and the environment, we must find sustainable energy solutions. Solar energy is ready today. Trina solar pay attention to providing smarter energy to solve some problems. Company pay attention to safety, environment and healthy.

In 2012, Trina Solar have a cooperation with a lots of world famous company, and have a meeting, World Economic Forum establish a organization to be represented to join in UN Conference on Sustainable Development. This is the biggest improve for this company, and going to the world.

3.1.1 History of Trina Solar Company

In 1997, Trina Solar founded in China, at first it just wanted to offer solar energy to the whole China. At first few years, scientific research personnel lead the company to

development, it improve a lot. *Trina Solar offers world class quality in its high performing modules. Listed on the NYSE, the company operates worldwide to deliver the best value to its customers. By the end of 2010, the company had reached a solar module capacity of 1.2GW, while its annual global shipments of 1.06GW have strengthened its leading industry position. To offer the power to remote areas of China. In 2003, Trina solar and solar power stations have been installed in Tibet.*

This success because of Trina solar team hard work of more than five years, also indicates it towards Trina solar photo voltaic bring to China. After that solar get more and more attention, and influence all over the world. Nowadays, solar has been developed at the basic stage, but in America and European it's arisen. Trina Solar take this industry into China.

3.1.2 Structures of Trina Solar Company

Broad of directors

The board of directors consists of eight directors, are elected by the holders of the company ordinary shares. At each annual general meeting, some of directors will re-selected. The directors retire by round and shall include any directors who wishes to retire and does not offer himself for re-election. The directors can fill up a deletion or add into broad. Any director will hold office until the next annual general meeting and shall then be eligible for re-elected.

Committees of the board of directors

Trina Solar has three committees under the board of directors: audit committee, compensation committee and corporate governance, nominating committee..

Audit committee is the supervision institution of company's accounting and financial reporting process and the financial statements of the company checked by this institution.

And the compensation committee assists the board in examination the compensation structure and to approve it, the directors and executive officers including all forms of compensation. The company's chief executive officer may not be present at any committee meeting during his compensation's deliberated.

[1]

The corporate governance and nominating committee can assists the board of directors when they have individuals selected, and determined if they have qualified to become our directors. Its determined the composition of the board and its committees.

3.1.3 Competition

If the company want to development and improve it industry, as to make it better and stand in the world. It need a lots of competition, Trina solar has advantage in module manufacture. First it just have company in China, know it has cooperation in all the world.

Photo voltaic industry has been sinking into cutthroat competition, especially in China, the situation is more serious. While Trina solar has been the leader of this industry in 2014, but the change of the environment makes everything is different. After more than 30 years of development, photo voltaic technology is still in the basic stages of development. Trina solar is active to take the method to handle the fluctuate of photo voltaic industry, and keep its competitive advantage in the future. Trina solar rely on scientific and technological innovation, this is the recently technology break through, it will also make the company to lead the world PV industry.

PV enterprises in China are experiencing by low cost, low efficiency of business model to the high-technology, pay attention to innovation business model and rapid transition phase. Trina PV battery conversion become efficiency and output power become more and more technical breakthrough, this is the development trend of the company. Recently, the company in the scientific and technological innovation has made breakthrough and inspire the investors to invest more for the company, especially in 2014. Trina Solar has the lead the PV industry as we know and pay attention to science and technology innovation, the company will be good for a long time, because of competition in the company makes them has sense of crisis.

[1] Http://www .Trina solar. com

3.2 Common size analysis of Trina Solar Company

About common size analysis, we can use it to analysis Trina Solar company's financial statement. The simple balance sheet you can see in Tab.3.1, and balance sheet is in Annex 1. The simple income statement you can see in Tab.3.2, and income statement you can see in Annex 2.

Tab.3.1 Simple balance sheet of Trina Solar(millions USD)

	2010	2011	2012	2013	2014
Non-current assets	716 950	1 108 726	1 099 369	1 045 528	1 426 219
Current assets	1 415 139	1 768 721	1 765 487	1 521 700	1 773 346
Total assets	2 132 089	2 877 448	2 864 856	2 567 229	3 199 565
Non-current liabilities	358 372	724 687	503 917	204 207	448 684
Current liabilities	600 069	1 007 435	1 479 154	1 540 543	1 749 802
Total liabilities	958 442	1 732 122	1 983 072	1 744 750	219 487
Shareholders' equity	1 173 647	1 145 325	881 784	833 478	1 001 078

In Tab.3.1, we have simple balance sheet, in balance sheet that we can see total assets equal to total liabilities plus shareholders' equity. So if the managers of the company calculate the economic of the company, they can calculate assets to know does the financial has some trouble. In 2010, Trina solar company does not have a good way to development and has less current assets, but in the next four years, the company begin to research and have it own way to progress. We can find the assets and equity both of them increase, but except shareholders' equity, its not stability. The total assets increase because more investors are willing to invest in the company and it means the company developed quickly in these five years.

Tab.3.2 Simple income statement of Trina Solar(millions USD)

	2010	2011	2012	2013	2014
Net sales	1 857 689	2 047 901	1 296 654	1 774 970	2 286 119
Cost of sales	1 273 328	1 715 259	1 239 411	1 556 776	1 900 547
Gross profit	584 361	332 641	57 243	218 193	385 571
Selling expenses	75 677	100 427	118 885	132 824	135 060
General expenses	72 710	157 128	176 719	103 523	108 150
Research expenses	18 624	44 120	26 510	19 926	22 258
Operating profit	417 348	30 965	-264 871	-38 080	120 102
Other expenses	70 107	73 848	51 886	62 020	56 820
Other income	12 281	12 372	24 797	14 834	13 465
Earning before taxes	359 522	-30 510	-291 960	-85 266	76 747
tax	-48 069	-7 309	25 405	13 030	-15 488
Earning after taxes	311 452	37 820	-266 555	-72 235	61 259

And in simple income statement, it reflect mainly the profit and expenses, and then we can calculate the earning after taxes and know how much profit does the company has. In income we gets lots of information about revenue. We can divided profit to operating profit and financial profit. Also, the expenses has operating expenses and financial expenses. In Trina solar, net sales is the most important way to get profit and the main expenses is selling expenses. The total revenue increase and total expenses increase too, we will analysis in te follow part.

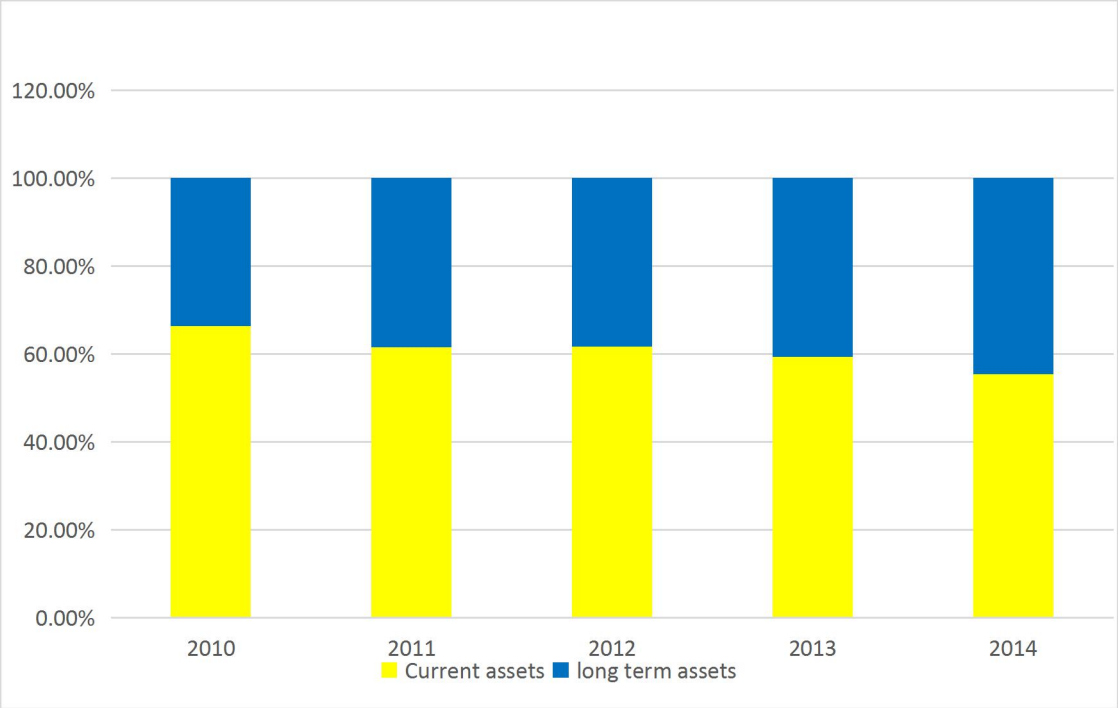
3.2.1 Vertical common size analysis of Trina Solar Company

In this part we use vertical common size analysis to analyze Trina Solar company. Vertical common size analysis is shows each item on a statement as a percentage of a base figure within the statement, it can compare the data of the company over time, it's usually pay attention on internal part of the company. Total assets can take part in two part, first is current assets and second is long term assets. The important is how many percentage that each assets have take part in. And than analyze company's working capital and how it work. We calculate the proportion of each item in total assets, and the result is in Tab.3.3. The percentages are in Chart.3.1.

Tab.3.3 The proportion of each item in total assets(%)

	2010	2011	2012	2013	2014
Cash and cash equivalents	35.31	28.39	28.18	18.96	12.28
Restricted cash	1.78	2.77	3.87	2.91	4.59
Inventories	3.71	8.68	11.12	9.53	10.97
project assets	1.64	0.31	0.28	2.86	1.88
other current assets	6.23	5.11	4.56	8.08	19.01
Accounts receivable	17.70	16.21	13.62	16.95	6.69
Current assets	66.37	61.47	61.63	59.27	55.42
Long term assets	33.63	38.53	38.37	40.73	44.58
Total assets	100.00	100.00	100.00	100.00	100.00

Chart 3.1 Vertical common size analysis of assets



In Tab.3.3, we know in this 5 years, the data of current assets and long term assets has changed. The current assets proportion is 66.37% in 2010, but begin to decrease in 2011, the next three years decrease quickly. The current assets is less then one year or a period of time, so the liquidity of assets is great in Trina solar. It takes a large part of total assets, though, it's decrease. First about cash and cash equivalents, it always decrease in 2010 to 2014, it means the company's cash is not stability, after the decrease of cash, it doesn't have enough money

to buy the equipment or invest in technology. And the cash has the rapid decrease in 2014, in December 17, 2014, the Commerce issued final rulings that imports of certain PV cells and parts were discard in the United States from China and Taiwan and that imports of certain PV cells and modules from China received subsidies. It's one of a reason why the company has less cash and cash equivalents but has more receivables. So the company is trying to a new way to walk into, like Trina Solar company these years begin to walk to the world, and lot of countries cooperation with Trina Solar in solar industry.

Then look at chart 3.1. It obviously to compare the current assets and long term assets. The proportion of current assets is decrease begin 2011, but it just a small change, it's 66.37% to 55.42%. And current assets is more than long term assets,the liquidity of the company is great and doesn't have risk with company. When it have financial trouble,it can use it current assets to face some trouble. The management of working capital can control by managers. Over the years, the company have expanded to distribution network globally. So the biggest amount of assets is the basic of it target. From 2010 to 2014, the long term assets growth from 33.53% to 44.58%, it really stable and make all the world see the financial and economic ability of the company.

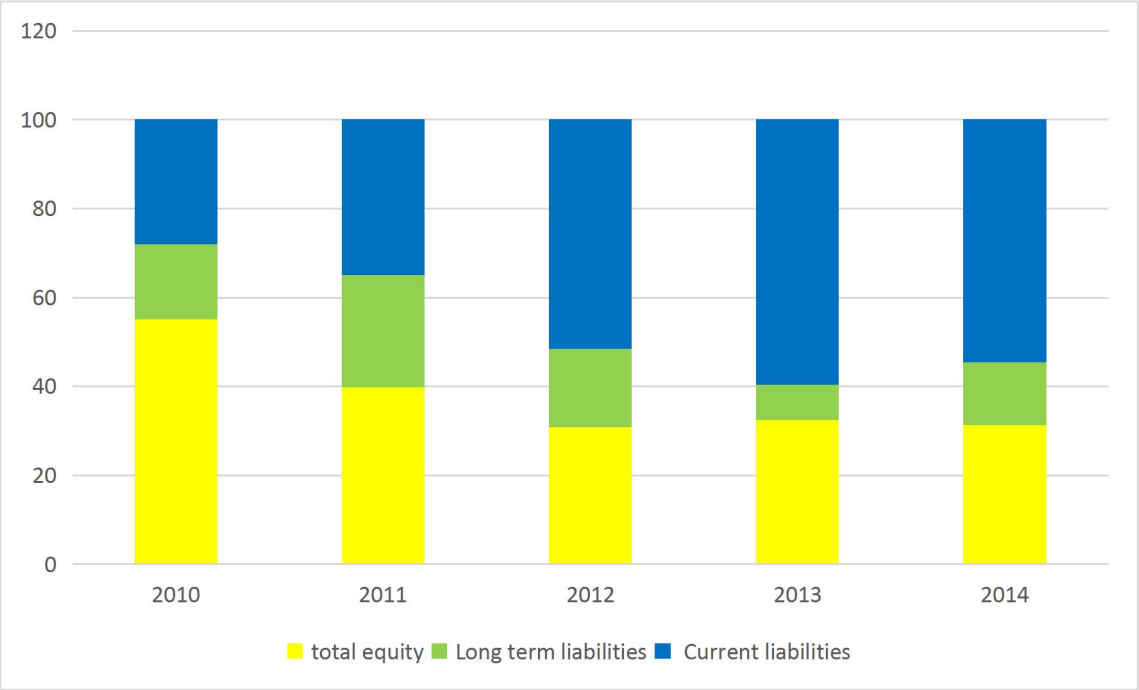
Next is the proportion of each item in equity and liabilities, the result is in Tab.3.4. The formula is(2.6).And we have Chart 3.2.about the percentage changes.

Tab.3.4 The proportion of each item in total equity and liabilities(%)

	2010	2011	2012	2013	2014
Long term liabilities	16.81	25.19	17.59	7.92	14.02
Current liabilities	28.14	35.01	51.63	59.75	54.69
Total liabilities	44.95	60.20	69.22	67.67	68.71
Total equity	55.05	39.80	30.78	32.33	31.29
Total equity and liabilities	100.00	100.00	100.00	100.00	100.00

In Tab.3.4, the equity and liabilities in 2010 to 2014 has some changes, in the first years, the equity is the big amount in the company, it has many shareholders in the company and need to dividend to them, at the structure of company we know that the shareholders of company has their right to elected and re-elected the directors. So the equity of the company is the main condition to get the money. But in 2011, the amounts of equity decrease, and the liability increase quickly, because we have been know the company innovation and get a new method to improve their technology and other part of company, the managers need to make more liability, maybe from bank or other cooperate company, and then they can make their road. All these reason makes equity decrease and liabilities increase.

Chart 3.2 Vertical common size analysis of equity and liabilities



In Chart 3.2, we analyze liabilities clearly. About total liabilities, we can analysis in two part, current liabilities and long term liabilities. If a company current liabilities is more than long term liabilities, the working of the managers is reasonable, company doesn't has any express to worry about next year or next season will have liabilities. Current liabilities is represent the company's liquidity. We can see Trina Solar company has a good liquidity in current liabilities in this five years, the current liability is increase every and long term assets

is decrease. But in 2013, it has a small amount of it, it's reasonable. And in 2014, because it need money to development, it has a big amount of long term liability than 2013, so in 2015, it will get more payable in their financial statement to satisfied the development of the company. With new technology use in Trina solar and the competition need the company increase liabilities. Because get more revenue these years, this revenue grow up lead the company need more capital, and decide how to working.

We made vertical common size analysis of income statement. And calculate the proportion of each item in revenue with Tab.3.2 , and get the result in Tab.3.5. The data is from Tab.3.2 , to make Tab.3.6. With expenses , and the result.

Tab.3.5. Vertical common size analysis of revenues(%)

	2010	2011	2012	2013	2014
Net sales	99.34	99.40	98.12	99.17	99.56
Interest income	0.14	0.15	0.65	0.22	0.12
Derivatives gain	0.51	0	0.65	0.12	0.15
Foreign exchange gain	0	0	0.07	0	0
Other income	0.01	0.45	0.51	0.49	0.32
Total revenue	100.00	100.00	100.00	100.00	100.00

About Tab.3.5. The vertical common size analysis of revenues express that the company have revenue every years, and the main way to get revenue is net sales, its always up to 99%, when the company meet this problem, they can increase the produce of the product, the sale will be increase though the costs will increase. Except net sales, other part of income make no sense and can't influence the revenue of company too much. But each need this small part of money to help the company to get the basic revenue. The slight decrease in the average selling price was primarily due to increased sales to countries with lower average selling price. Trina solar face this problem because its has many item in each country, the product has different price in each country, some development countries has cooperation with Trina solar these year, and make the total revenue decrease, especial in net sales.

Tab.3.6. Vertical common size analysis of expenses(%)

	2010	2011	2012	2013	2014
Selling expenses	31.92	26.74	31.79	41.73	41.91
General and administrative expenses	30.66	41.84	47.25	32.52	33.56
Research and development expenses	7.85	11.75	7.09	6.26	6.91
Other expenses	29.57	19.67	13.87	19.49	17.63
Total expenses	100.00	100.00	100.00	100.00	100.00

In Tab.3.6, we use vertical common size analysis. The expenses of company is if the company can get profit, we can see Tab.3.2, and it has expenses, it means that it loss . We can see the general and administrative expenses is the big amount in company's expenses. And it has increase the first three years, and has a small decrease in 2013,but after that it become increase. In generally, the operating expenses based on the respective departments in which employees worked at the time of the grant. Selling expenses as a percentage of net sales increased from 2012 to 2013, primarily due to the decrease in net sales. The general and administrative expenses is too much, because its a technology company, and use progressive industry. The decrease in general and administrative expenses was mainly a result of greater collection efforts for outstanding accounts receivables relating to certain customers and consequently a decrease in bad debt allowance for accounts receivable in 2013. The expenses decreases in depreciation and the costs of raw materials used in our research and development activities. It made the company need to expenses in initial stage. If develop in later period it will get revenue.

3.2.2 Horizontal common size analysis of Trina Solar Company

Now, we will introduce the horizontal common size analysis of Trina Solar. It has absolute change and percentage change in balance sheet. In Tab.3.7.You can see the result of absolute change, we use Tab.3.1 . The result of percentage change is in Tab.3.8, use Tab.3.1 .

Tab.3.7. Absolute change of each item in balance sheet(millions of USD)

	2010/2011	2011/2012	2012/2013	2013/2014
Long term assets	391 776	-9 356	-53 841	380 691
Current assets	353 582	-3 234	-243 786	251 645
Total assets	745 358	-12 591	-297 627	632 336
Long term liabilities	366 314	-220 770	-299 710	244 477
Current liabilities	407 365	471 719	61 388	209 259
Total liabilities	773 680	250 949	-238 321	453 736
Shareholders' equity	-28 321	-263 540	-48 305	167 599

Tab.3.8.Percentage change of each item in balance sheet(%)

	2010/2011	2011/2012	2012/2013	2013/2014
Long term assets	54.64	-0.84	-4.90	36.41
Current assets	24.99	-0.18	-13.81	16.54
Total assets	34.96	-0.44	-10.39	24.63
Long term liabilities	102.22	-30.46	-59.48	119.72
Current liabilities	67.89	46.82	4.15	13.58
Total liabilities	80.72	14.49	-12.02	26.01
Shareholders' equity	-2.41	-23.01	-5.48	20.11

In Tab.3.7.and Tab.3.8, we use horizontal common size analysis, in 2012 and 2014 the long term assets increase, it is increase -4.9%% in 2012 to 35.41% in 2014, as we can see its increase quick in 2014, not only long term assets but also current assets increase. If the company's total assets increase, the increase of long term assets always more then the current assets, because the company is extent in a period of time, in Trina solar company the extent period is 2012 to 2014. That is why the company need to increase equity. In 2012, the current liabilities has a rapid increase, become decrease its current liability in 2013. The deposit in the bank, account receivable increase, or liabilities decrease will lead revenue increase. But the decrease of revenue lead assets decrease in first three year and liabilities increase. How to use this method to analyze the progress of he company is what we need to know.

Because its has a large amount change in long term liabilities in 2014, it has absolute rapid change and percentage change in 2011 and 2014. In 2011 the long term liability

decrease because it doesn't need borrow lots of money to grow up, but in 2014 its opposite. It need to borrow money to development. And we can see shareholders equity change is negative in the first four years, it means that the company can't has enough person to invest in the company. In 2010 to 2011, the interest rate is decrease so the company is easily to face risk, they have more long term liabilities not current liabilities. In 2011 to 2013, the interest rate increase, more risk they need to face then before, lead more current liabilities.

And then we have horizontal analysis of income statement. Results is absolute change in income statement in Tab.3.9. We use the data in Tab.3.2 . And the percentage change in income statement in Tab.3.10. We use the data in Tab.3.2 .

Tab.3.9. Absolute change of each item in income statement(millions of USD)

	2010/2011	2011/2012	2012/2013	2013/2014
Net sales	190 212	-751 246	478 315	511 148
Cost of sales	441 931	-475 848	317 365	343 770
Gross profit	-251 719	-275 398	160 950	167 377
Selling expenses	24 749	18 458	13 939	2 236
General and administrative expenses	84 418	19 590	-73 195	4 626
Research and development expenses	25 495	-17 610	-6 584	2 331
Operating profit	-386 382	-295 837	226 791	158 182
other expenses	3 740	-21 961	10 133	-5 200
other income	90	12 425	-9 963	-1 368
Earning before taxes	-390 032	-261 449	206 694	162 014
tax	40 759	32 714	-12 374	-28 518
Earning after taxes	-273 632	-304 375	194 319	133 495

Tab.3.10. percentage change of each item in income statement(%)

	2010/2011	2011/2012	2012/2013	2013/2014
Net sales	10.24	-36.68	36.89	28.80
Cost of sales	34.71	-27.74	25.61	22.08
Gross profit	-43.08	-82.79	281.17	76.71
Selling expenses	32.70	18.38	11.72	1.68
General administrative expenses	116.10	12.47	-41.42	4.47
Research development expenses	136.89	-39.91	-24.84	11.70
Operating profit	-92.58	-955.37	-85.62	-415.39
other expenses	5.34	-29.74	19.53	-8.38
other income	0.74	100.43	-40.18	-9.23
EBT	-108.49	856.91	-70.80	-190.01
tax	-84.79	-447.56	-48.71	-218.86
EAT	-87.86	-804.80	-72.90	-184.81

In Tab.3.9, and Tab.3.10, we both use horizontal analysis, the expenses is a big amount in Trina Solar company's income statement. Because of provided a full provision for their accounts receivable. The general and administrative expenses is decrease in 2013 but increase in 2014, it means that the company manege about the expenses and pay attention to it. Another large change amounts is operating profit in 2012,it decrease rapidly in 2012, the percentage of it is -995.37%, the company has a large percentage change in 2012. Because the operating profit is happened in the daily activities and need to plus or minus non-daily activities profits and loss, then get the total profit. But the absolute change in operating profit is not bigger than 2011. So percentage change always influence the profit of the company. As we can see EBT the these two different Tab. In Tab3.9, the absolute change in 2011 and 2012 is negative. EBT has this condition because of in 2010 the company loss,but 2011 and 2012 can't remedy the loss before. In 2013 and 2014 is fast increase and get more earning before taxes. In Tab.3.10, the percentage change in EBT is negative in 2011,2013 and 2014, and the percentage change is large in 2014. So the percentage change just represent a ratio of change. And the EBT has influence EAT.

4. Financial ratios of Trina Solar Company

In this chapter, we describe financial ratio analysis to measure the company. The method and formula we describe is in chapter 2, and we will calculate these ratio in this chapter. We will have liquidity ratio of Trina solar, activity ratio of Trina solar, solvency ratio of Trina solar, profitability ratio of Trina solar and DuPont analysis of Trina solar.

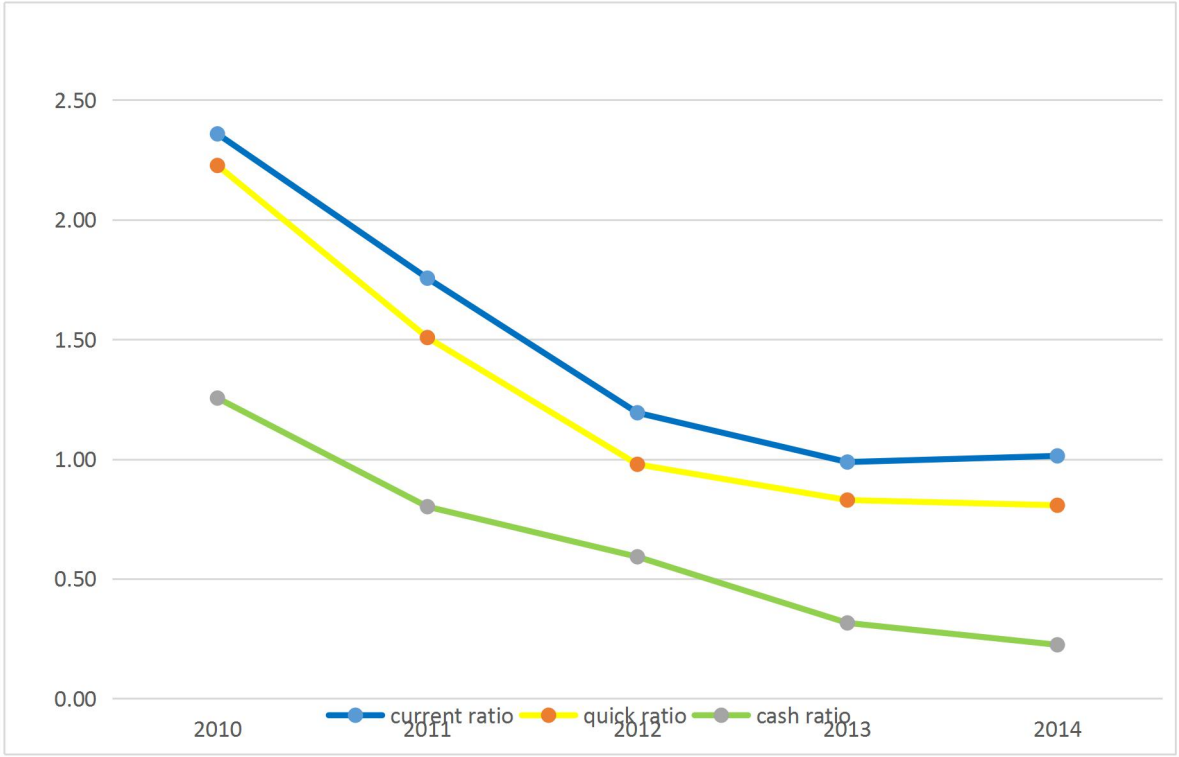
4.1 Liquidity ratios of Trina Solar Company

This part is about liquidity, as we read in chapter 2, we can use current ratio, quick ratio and cash ratio to analysis if a company has liquidity. The liquidity ability is useful to manage a company. These shout term liquidity current has the results in Tab.4.1 and Chart4.1

Tab.4.1 Current ratio of Trina solar.

	2010	2011	2012	2013	2014
current ratio	2.36	1.76	1.19	0.99	1.01
quick ratio	2.23	1.51	0.98	0.83	0.81
cash ratio	1.25	0.80	0.59	0.32	0.22

Chart 4.1 Trend of current ratio,quick ratio and cash ratio.



Current ratio

About current ratio, we use current assets and current liabilities to calculate it. In Tab 4.1 and Chart 4.1, we can see that current ratio decrease, because current liabilities increase but current assets has a small change. It's not benefits for a company when the current ratio decrease, the liquidity of the company is weak, company doesn't has enough money to liquid. That inventory influence current ratio, the inventory decrease because of the production and sales in Trina solar company reduce, the price of inventory reduce and the new item doesn't need store in these years. The inventory decrease and influence current decrease from 2.36 to 0.99 in2010 to 2013. But increase current liabilities has some advantage, like increase innovation product and go ahead to develop. As we know,the current ratio has a little increase in 2014 the number is 1.01, but the increase of current liabilities is also large than the increase of current assets.

In Chart 4.1, the trend of current ratio is obviously, its decline and the line is steep, why the current ratio decline is determined on current assets and current liabilities, these chart is a other why to describe the change about current ratio.

Quick ratio

About quick ratio, it always use to calculate if we have no inventory, how does the ratio change. So we use current assets minus inventory and then divided by current liabilities. As Tab 4.1 and Chart 4.1 a company's ability to meet its short-term obligations with its most liquid assets. Quick ratio decrease quickly in 2011 from 2.23 to 1.51, because current liabilities increase begin 2011, the company Trina solar have more and more current liability, in 2010 has 600069 USD but in 2011 has 1007435 USD . The main reason to influence quick ratio is current ratio. If we want to adjust quick ratio is better to increase current assets and account receivable. But Trina solar has no ability to adjust it these years, it inventory and the method of produce is difficult to adjust.

Cash ratio

About cash ratio, we need to have cash, short term marketable investment and current liabilities. High marketable short term investment in 2010 is 752747586 USD, this number

and cash lead to a strong cash ratios. It is helpful for company to measure if they have financial problem. The cash ratio in Trina solar company decrease between 2010 to 2014. The cash decrease and current liabilities increase that the cash ratio decrease quickly, in 2014 is down to 0.22. Cash ratio is influence by the cash inflow and cash outflow in operating activities. It reflect the cash flow in operating activities in Trina solar company in 2010 to 2014 can't pay for current liabilities. The company's cash inflow is decrease, its devoted to develop the item and invest more more so can not get many inflows.

4.2 Activity ratio of Trina Solar Company

In this part, we need inventory turnover, receivable turnover, total asset turnover, number of days payable and number of days receivable to measure the efficiency of assets usage. And analysis the effectively assets are used by a company. The result we get in Tab.4.2, and use formula in chapter 2.

Tab.4.2 Turnover of Trina solar.

	2010	2011	2012	2013	2014
Inventory turnover	23.48	8.20	4.07	7.26	6.52
Receivable turnover	5.58	4.85	3.03	4.30	4.38
Total asset turnover	1.01	0.82	0.45	0.65	0.79

Inventory turnover

About inventory turnover, is the ability that current assents use in inventory. We need to have cost of goods sold and average inventory. As Tab.4.2, the inventory turnover decrease, especially in 2011, its decrease from 23.48 to 8.20, because the in 2011 Trina solar reports inventories at the lower of cost or market. The company determines cost on a weighted-average basis. These costs include direct material, direct labor, tolling manufacturing costs, and fixed and variable indirect manufacturing costs, including depreciation and amortization. The inventory turnover is lower, so the risk of inventory overstock and loss is higher. The efficiency of inventory stand in assets is lower, in 2010 it

just 3.71% that we have calculate before, so that the assets conversion and operating ability is weak.

Receivable turnover

About receivable turnover, its the number of times that the sales of goods on credits. We need to have total revenue and average receivable, and the average receivables is calculate by years beginning receivable plus ending receivable than divided two. In Tab.4.2, the receivable turnover decrease in 2010 to 2012, because the average receivable increase.In 2013 and 2014, the receivable turnover begin to increase 4.38 is a little higher then 4.30, but its still lower than 2010 and 2011, especial in 2010 is 5.58. The receivable turnover begin more and more lower, in 2012 is 3.03,it means that it has low efficient credit and collection the company has. The receivable turnover decrease because the company can't get receivable in 2010 to 2014, the average receivable period is long, that means the borrower has no credit and the company has no ability to ask the borrower to pay for it. The risk of Trina solar is increase.

Total assets turnover

About total assets turnover, we need total revenue and average total assets. Average total assets is years beginning assets plus ending assets than divided two. In Tab.4.2, that total assets turnover decrease in 2010 to 2012, the data is 1.01 to 0.45. It's a large change because the relative change about total assets, the total assets increase between 2010 to 2012. But in 2014 it increase to 0.79, it just a small change but make company's overall ability increase. The Trina solar company succeed using its assets to generate revenue. The total asset turnover is small, so the sales ability of the company is weak and the availability of assets is lower, the period of assets turnover is important. if the period of turnover is long it means that the company has no ability to conversion assets. Trina solar company's assets decrease in 2010 to 2013 its influence assets turnover.

The days of sales result is in Tab.4.3.

Tab.4.3. Days of sales of Trina solar(%)

	2010	2011	2012	2013	2014
Number of days payable	53.89	100.46	124.86	1232.19	934.90
Number of days receivable	74.14	83.15	109.83	89.47	97.10

Number of days payable

Payable is a kinds of liabilities that company have been not pay, the number of days payable is calculate how many times a year the company pay for debt. The account payable and purchases we can get from balance sheet. In Tab.4.3, the number of days payable increase between 2010 to 2013, especially in 2013, is 1232.19. In 2014 the data is decrease into 934.90. The number of payable increase means the company has ability to pay for their debt. Trina solar has the more and more biggest market these years, so its important to increase payable ability, and the increase of liabilities influence how many payable we need. The number of days payable is different with account payable, the number of days is how quickly the company can pay for the liabilities, is use to analysis company's operating activities. If the activities is profitable the number of days will decrease. It means the company has abilities to pay for it.

Number of days receivable

Number of days payable is determine the effect of a company's credit and collection efforts in allowing credit.in Tab.4.3, The number of days receivable between 2010 to 2012 increase from 74.14 to 109.83, it not a large change when we compare with number of days payable. But the increase of it represent the change of account receivable and revenue. The revenue decrease and receivable decrease lead to number of days receivable decrease. It means that the effective of company's credit and collection efforts in allowing credit is higher in 2010 to 2012. But it begin to decrease in 2013, it means the effective is become weak in 2013 and 2014 ,but it also a big data as a company, so the company needn't fear the financial crisis.

4.3 Solvency ratios of Trina Solar Company

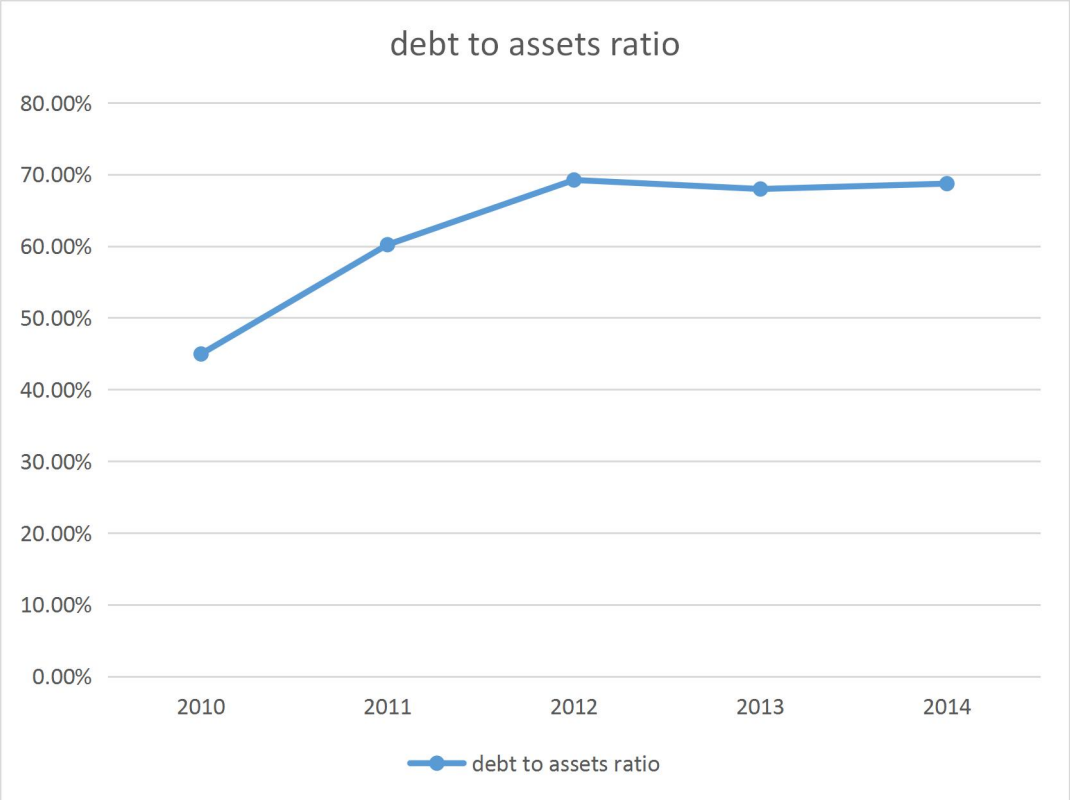
In this part, have debt to assets ratio, debt to equity ratio and interest cover ratio to measure company's ability to meet its long term liability, it also financial leverage ratios. Next Tab 4.4 and Chart 4.2 is about debt to assets ratio.

Debt to assets ratio

Tab.4.4. Debt to assets of Trina solar(%)

	2010	2011	2012	2013	2014
debt to assets ratio	44.95	60.20	69.22	67.96	68.71

Chart 4.2 Trend of debt to assets ratio



About debt to assets ratio, is also called debt ratio. It measure company's ability to meets its long term liabilities. And we need total debt and total assets. How many debt we have in total assets is the debt to assets ratio. And we measure it in percentage. If the ratio is higher, it means that company have more debt in total assets, the debt is 2198487 USD in

2014. Like Trina solar company's debt to assets ratio increase between 2010 to 2012, as we know the number is 69.22% in 2012, the company is in the primary step of their development, so they need to increase the debt to establish the equipment. This ratio is influence by how much assets is comes from the creditor, the company need more debt because they haven't enough assets to development, like in 2012 and 2014 they establish new company in European countries. These ratio is lower means that the company has ability to pay the debt, Trina solar need to decrease the debt ratio and use their assets to develop. In Chart 4.2, the trend of Trina solar company's debt to assets ratio is showed. First its increase and second has a small decrease. In 2010 the ratio is 44.95% and in 2012 is 69.22%, is a rapid increase about a company.

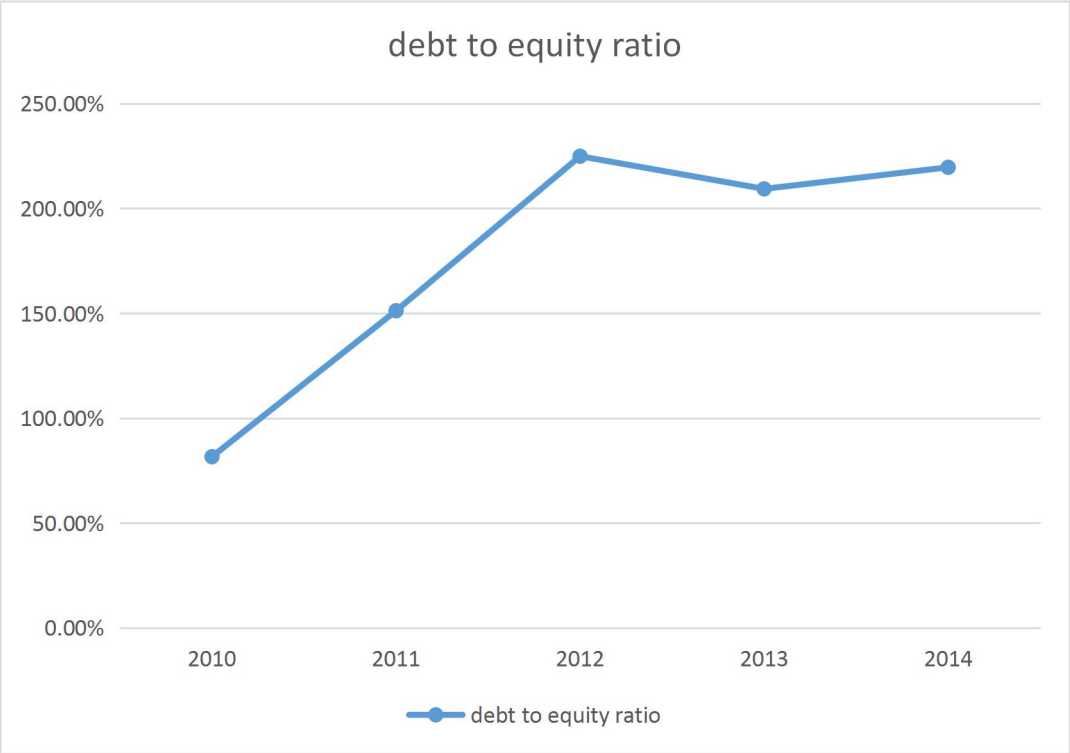
Debt to equity ratio

Here we have result about debt to equity in Tab.4.5 and Chart 4.3

Tab.4.5. Debt to equity of Trina solar (%)

	2010	2011	2012	2013	2014
debt to equity ratio	81.66	151.23	224.89	209.33	219.61

Chart 4.3. Trend of debt to equity ratio



About debt to equity ratio, its measure the amount of debt relative to equity, we need total debt and total shareholders' equity to calculate it. In Tab.4.5 and Chart 4.3 we can see the number of these ratio and the trend of it. The trend is similar as debt to assets ratio first has a rapidly increase in 2010 to 2012, in 2012 the number is the highest up to 224.89%, second as a small decrease in 2013, about 20% and then increase in 2014, about 10%. A higher debt to equity ratio usually implies less financially stable business. And Trina solar has a higher debt percent. The debt to equity ratio is higher means manager will face the loan will not pay back. Its more risky and the Trina solar company need to decrease debt to equity ratio.

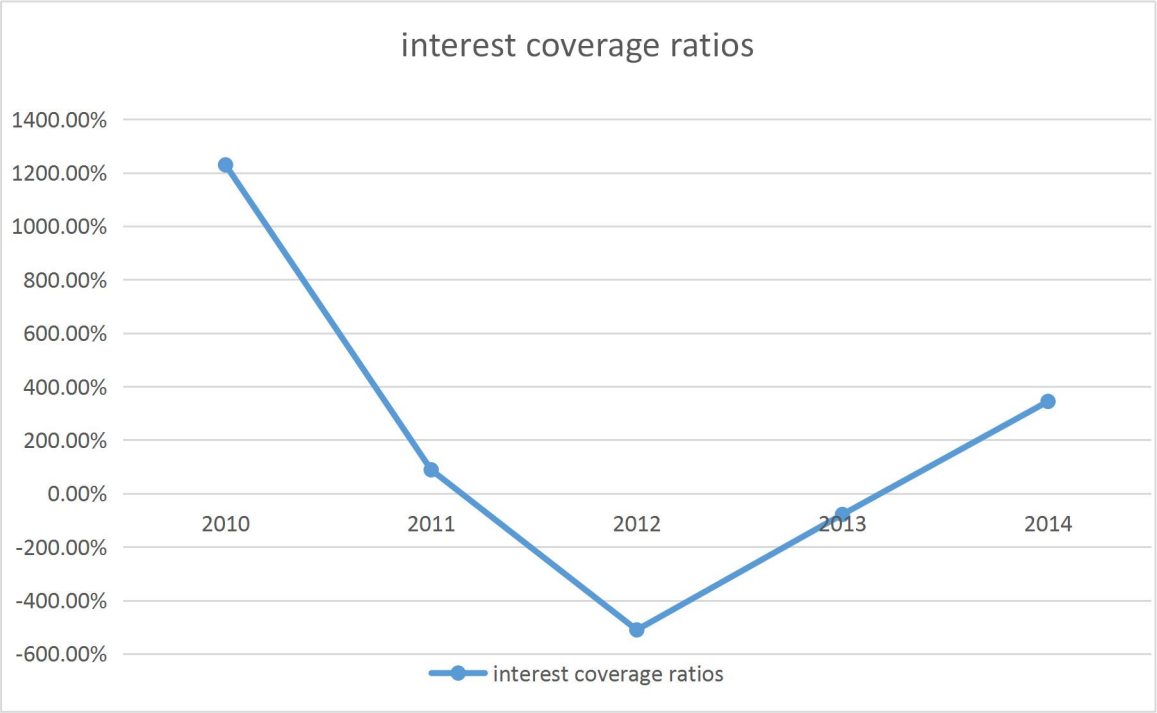
Interest period coverage

Here we have interest coverage ratio in Tab,4,7 and Chart 4.4.

Tab.4.6. Interest coverage ratio of Trina solar(%)

	2010	2011	2012	2013	2014
interest coverage ratios	1229.23	88.42	-510.48	-78.61	344.27

Chart 4.4. Trend of interest coverage ratio.



About interest coverage ratio, it measure how debt is related to assets or equity. We need earning before interest and taxes, and interest payment to calculate. In Tab.4.6 and Chart 4.4, we can see the result that calculate and the trend about interest coverage ratios. The ratio decrease rapidly in 2010 to 2013, its still positive number in 2010 is 1229.23%, but it is lower in next three years means that the weak solvency ratio the company has. In 2012 its has negative 510.48% about these ratio. If the earning before interest and taxes has a small change, that means the interests payment change, the interest payment decrease in 2012 and 2013 lead to the decrease of interest coverage ratios decrease quickly. The interest payment reduce has many reason,like bank adjust the interest rate, the price of good increase or some other reason. And the company has difficulty to pay interest expenses on outstanding debt. Because of interest payment increase, the Trina solar has more cooperation company in 2010

to 2013,so they need pay for their item with cooperation company.

4.4 Profitability ratios of Trina Solar Company

In this part, we have operating profit margin, return on assets and return on equity to measure the ability to generate profit from invested capital in the form of return during a period. We have result in Tab.4.7 about operating profit margin, return to assets and return to equity.

Tab.4.7. Profitability ratios of Trina solar(%)

	2010	2011	2012	2013	2014
Operating profit margin	22.47	1.51	-20.43	-2.15	5.25
Return to assets	19.57	1.08	-9.25	-1.48	3.75
Return to equity	26.54	3.30	-30.23	-8.67	6.12

Operating profit margin

About operating margin, is measure operating efficiency. We need to know operating income and total income that in income statement. In Tab.4.7, the operating margin about Trina solar decrease rapidly in 2011, its decrease from 22.47 to 1.51, the higher operating margin in 2010, the working capital operating is more efficiency. But in 2010 to 2013 the operating profit margin decrease, the proportion of a company's revenue is left over after paying for variable costs of production is lower. In 2012 and 2013 the number is negative 20.43, so it can't pay for variable costs. It has a little increase in 2014 is 5.52, begin to up to 0, but it not enough to pay for costs. The profit margin decrease because that the technology level doesn't change but add some other production factors, and the factor get more and more lead to add this factor per unit the profit margin decrease. So Trina solar company's operating profit margin decrease because it get more production factors in 2011 to 2014, the managers just want to develop but it can't.

Return on assets

The return on assets is to evaluate the profitability of company relative to its total assets. The data we have is net income and average total assets. The company Trina solar

company's return to assets decrease quickly in 2010 to 2012, as we know 2010 is 22.47% but suddenly down to -9.25 in 2012, so the company has less return, they get a little revenue in these year. In 2013 and 2014 an increase in the percentage of return on assets is an indication of profitability for a business, the number is -1.48 and 3.75. Its increase because of net income increase quickly in 2014 and the total assets increase in 2013 and 2014. The return decrease quickly, so the investor gets less money, because the company has higher debt to equity ratio, the more debt they have the less return they have.

Return on equity

The percentage of return to equity reflect the relationship between net income and equity. The decrease of shareholders' equity influence return of equity decrease quickly, the shareholder investment is important to company to get some assets. In 2010 to 2012, it appear negative 30.23 about return on equity, so Trina solar company is not efficiently to use money from shareholders to generate profits and can not grow the company. The investor want to see a high return on equity because this indicates that the company is using its investors' fund effectively. So Trina solar increase their equity from shareholders in 2014, why it increase their shareholders is that they need them to invest more money.It increase to positive number 6.12%. It has effective to investors. The higher the ROE, the better is more than 15% belongs to ideal, while more than 20% belongs to the excellent level. It obviously that Trina solar can't have good return on equity.

4.5 Dupont analysis of Trina Solar Company

In this part, we have Dupont analysis to analyze what drives the value of financial ratio which factors have impact in its value. If calculate ROE we need formula (2.33) and (2.34). Here is the method of gradual changes about ROE in Tab.4.10.

Tab.4.10. Method of gradual changes in 2010 and 2011

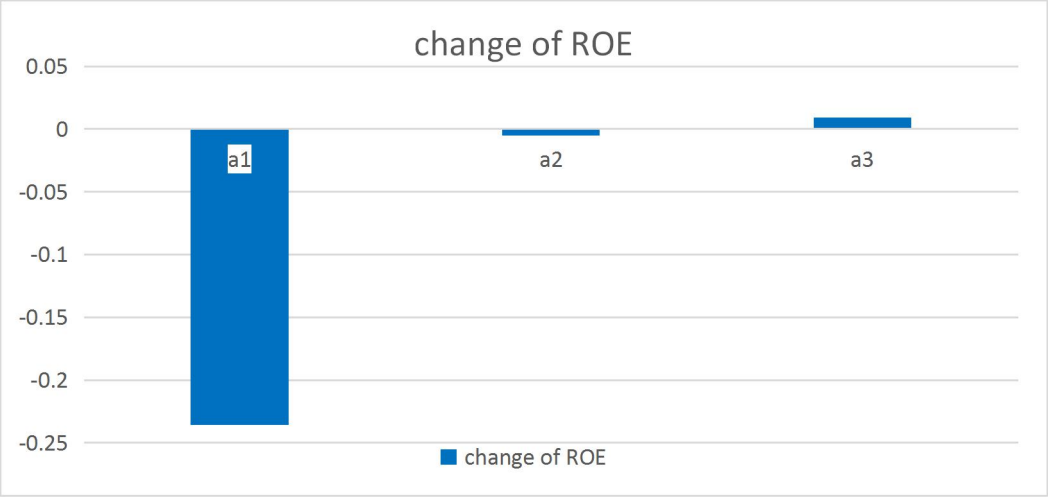
	2010	2011	2010/2011	ΔROE	order
a1=EAT/S	0.1677	0.0185	-0.1492	-0.2361	3
a2=S/Assets	0.8713	0.7117	-0.1596	-0.0054	2
a3=Assets/Equity	1.8166	2.5123	0.6957	0.0091	1

For a_1 : $\Delta ROE_{a1} = -0.1492 \cdot 0.8713 \cdot 1.8166 = -0.2361$

For a_2 : $\Delta ROE_{a2} = 0.0185 \cdot -0.1596 \cdot 1.8166 = -0.0054$

For a_3 : $\Delta ROE_{a3} = 0.0185 \cdot 0.7117 \cdot 0.6957 = 0.0091$

Chart.4.5. Trend of ROE with method of gradual changes in 2010 and 2011

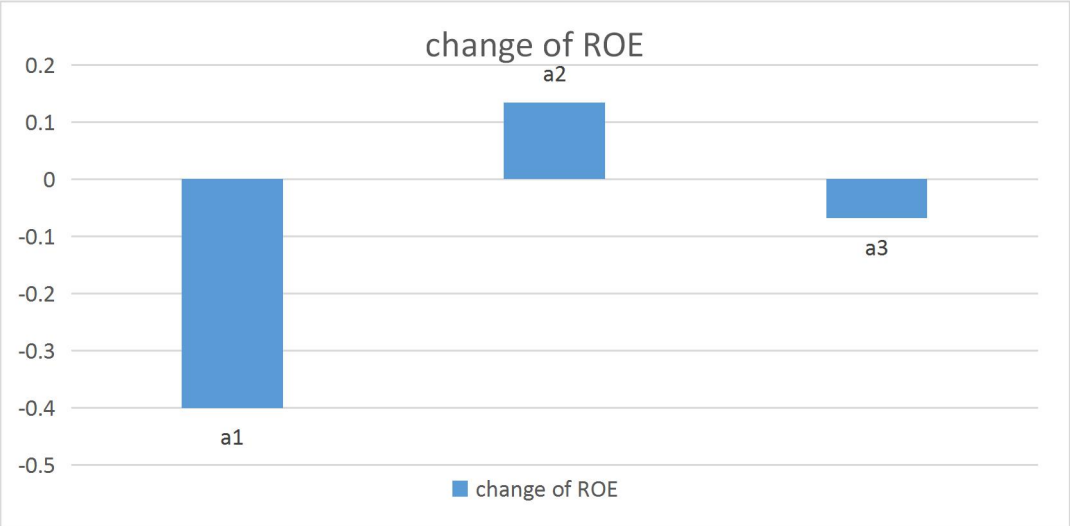


We can calculate ROE to use formula (2.33) and (2.34), in (2.34) we know that we can take part ROE, that net income divided revenues is net profit margin, revenue divided total assets is assets turnover and total assets divided equity is financial leverage. So if we want to calculate the change of ROE, first we have to know these three data. Method of gradual changes is enables to quantify the change in the basic ratio cause by the change in the component ratio. And ΔROE is the three component in the case of decomposition. In Tab.4.10 and Chart 4.5, we find that the change in basic cause by the change in component ratio, we use a1, a2 and a3 to represent component ratio, and we know the relative change in 2010 and 2011. The profit margin is -0.02361 the order is 3 and assets turnover is negative 0.00054 the order is 2, its lead to the change of ROE is negative. So we know the net income increase higher then the increase of revenue, the increase of revenue is higher then increase of total assets. The ROE goes up due to an increase in the net profit margin and asset turnover, this is a very positive sigh for the company.

Tab.4.11. Method of gradual changes in 2011 and 2012

	2011	2012	2011/2012	*ΔROE*	order
a1=EAT/S	0.0185	-0.2056	-0.2240	-0.4006	3
a2=S/Assets	0.7117	0.4526	-0.2591	0.1338	1
a3=Assets/Equity	2.5123	3.2489	0.7366	-0.0685	2

Chart.4.6. Trend of ROE with method of gradual changes in 2011 and 2012

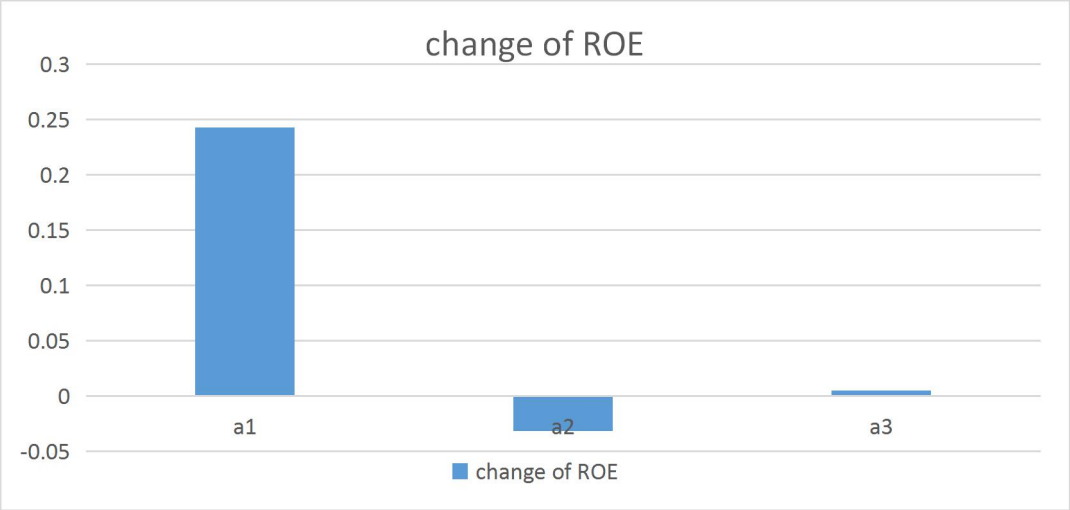


Tab.4.11 and Chart 4.6, we find that the change in basic cause by the change in component ratio, we use a1, a2 and a3 to represent component ratio, and we know the relative change in 2011 and 2012. The profit margin and financial leverage is negative lead to the change of ROE is negative. The ROE goes up and than goes down make the Trina solar first has number -0.4006 and next is 0.1338 with profit margin and assets turnover. The assets turnover is order 1, so the company can conversion assets quickly, it means current assets get more and more. If the equity multiplier is the source of the rise, the company was appropriately leveraged, and make more risk. We need to rise the ROE to go through the risk.

Tab.4.12. Method of gradual changes in 2012and 2013

	2012	2013	2012/2013	*ΔROE*	order
a1=EAT/S	-0.2056	-0.0407	0.1649	0.2424	1
a2=S/Assets	0.4526	0.6914	0.2388	-0.0316	3
a3=Assets/Equity	3.2489	3.0801	-0.1688	0.0047	2

Chart.4.7. Trend of ROE with method of gradual changes in 2012 and 2013

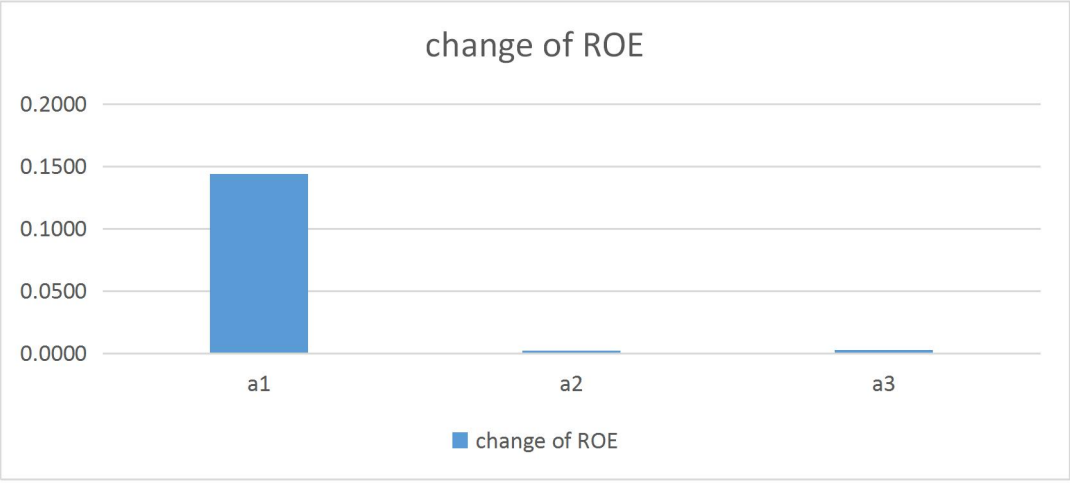


Tab.4.11 and Chart 4.6, we find that the change in basic cause by the change in component ratio, we use a1, a2 and a3 to represent component ratio, and we know the relative change in 2012 and 2013. The net profit margin is 0.2424 and order is 1, assets turnover is negative 0.0316. In 2012 and 2013 the assets conversion decrease, and financial leverage is not good, so the relative change of ROE is increase first but decrease in 2012.

Tab.4.13. Method of gradual changes in 2013 and 2014

	2013	2014	2013/2014	*ΔROE*	order
a1=EAT/S	-0.0407	0.0268	0.0675	0.1437	1
a2=S/Assets	0.6914	0.7145	0.0231	0.0019	3
a3=Assets/Equity	3.0801	3.1961	0.1160	0.0022	2

Chart.4.8. Trend of ROE with method of gradual changes in 2013 and 2014



Tab.4.12 and Chart 4.7, we find that the change in basic cause by the change in component ratio, we use a1, a2 and a3 to represent component ratio, and we know the relative change in 2013 and 2014. The net profit margin and assets turnover and financial leverage is positive, but the relative of change in basic is decrease. The profit margin is the order 1,its means the company get more profit per unit, and assets turnover is 0.0019 the order is 3, so the company has less current assets. The company's return on equity is not stable, because the company's shareholders can't determined hoe much money they invest in each year.

4.6 Summary

In this chapter, we make financial analysis about Trina solar company. Liquidity ratio，activity ratio, solvency ratio and profitability ratio is the method we use for calculate finance. And this part summary the whole change in the company.

About liquidity ratio, we use it to analysis how liquidity the money use in the company. The method is to calculate current ratio, quick ratio and cash ratio. For the company it's important to manage the working capital, how to manage the working capital is to increase the current liability and current assets. It can increase the liquid of capital. In Chart 4.1, the trend of current ratio is 2.36% t o1.01%, quick ratio is 2.23% to 0.18%, and cash ratio is 1.25% to 0.22%, both of them decrease in 2010 to 2014, especially in 2010 to 2012, it decrease quickly. The current ratio is lower then other year and lower then the range that change in other year. The liquidity is not good in Trina solar, because of the change in 2010. In 2010, the company announce they will invest more money in 2011 to 2013, to make the capacity extent and research. So the liquidity decrease. The current liabilities and current assets influence the range of liquidity ratio.

About activity ratio, we divided it for two part, first is turnover and second is number of days change in payable and receivable. Turnover is to calculate the ability that current assets, the goods sales on credit. The inventory turnover, receivable turnover and total assets turnover is decrease in 2010 to 2012 but increase in 2012 to 2014. The activity ratio is not good at first, it means that the company can't have ability to have operating activities, but as its develop in the next years, the activity is good. It has many partner on business and also in

foreign countries. The inventory turnover is 23.48% to 4.07% in 2010 to 2012, but increase to 6.52% in 2014. So Trina solar company's activity ratio is feeble in the first three year, the company need to improve the ability to turnover, to decrease the costs of goods sold and average number of inventory, receivable and total assets. And number of days payable and receivable is means that the company has many debt in 2010 to 2012 and the company's credit and collection efforts in allowing credit is less in 2010 to 2012. Because the trend is decrease.

About solvency ratio, the debt to assets ratio, debt to equity ratio and interest cover ratio can measure that the company has ability to meet debt in first three years, because the debt to assets ratio increase in 2010 to 2012 from 44.95 %to 69.22%. And the company has less financial business because the debt to equity increase in 2010 to 2012 from 81.66% to 224.89%. But the debt is not related to assets and equity because the interest cover ratio is decrease in 2010 to 2012 from 1229.23% to -510.48%. In 2013 and 2014 is opposite. The solvency ratio is improve and the Trina solar has ability to meet debt, they can't meet debt at first because their need money equipment and others.

About profitability ratio, is to measure if the company has profitable to meet the capital. Operating efficiency in Trina solar is not good at 2011 and 2012 , in 2012 the operating profit margin is -20.43. So the company need to get more operating income and more then other income. The return to assets ratio and return to equity ratio is how many assets or equity in total assets, is a kind of method to measure the Trina solar company's profitability. And the trend of it is similar as operating profit margin in 2010 to 2014. About Dupont analysis, is measure the change of ROA and ROE, in this chapter we use method of gradual changes, is enables to quantify the change in the basic ratio cause by the change in the component ratio. Its good in 2013 to 2014, the profit margin is the first order the data is 0.2424. The profitable is bad in Trina solar, they can't meet capital and get less revenue.

5. Conclusion

According to this thesis. We have been finished the financial analysis of Trina solar company, from the thesis we know the operating ability of the company, its useful for managers, investors and creditors. If the company has financial problem, the analysis can help managers to built new way to development, and adjust the way they use. Investors can decided how much money they invest. For example, is the company doesn't have working capital, it means they need to financing, we use analysis method to calculate it.

The aim of this thesis were using common size analysis, financial ratio analysis and pyramidal decomposition to analyze the financial health of Trina solar from 2010 to 2014.

In chapter two, the describe of financial report and it has balance sheet, income statement and cash flow statement. What does the annual report describe is mention and we use the structure about financial report to make the tab in chapter three and four. This chapter is the basic of the thesis, the financial analysis method we mention in this chapter is use to analysis different way about how to financing. Financial common size analysis, ratio analysis and Dupont analysis is respective use horizontal-vertical method, percentage compare and pyramidal decomposition method.

In chapter three, we ask the information for selected company. Trina solar is the company for solar development, and its has great improve in these years because more and more countries pay attention to environment. The company has their own history and structure we have introduce in this chapter. If we need to have financial analysis, make simple financial report in 2010 to 2014 is important, so first make simple balance sheet and income statement about Trina solar. Use financial report to calculate common size analysis, we compare these five years data and will find the trend of and the percentage change and absolute change. The change help the company to make the capital adjust.

In chapter four, is the explain of all financial ratio. These financial ratio analysis what the assets influence the company. We calculate liquidity ratio, activities ratio, solvency ratio and profitability ratio to analysis the liquid of the company, the operating activities working in the company, and if the company has ability to pay for debt. The company meed capital to working, and the change of capital in 2010 to 2014 we have the tab and chart to compare it,

its for Trina solar company. The formula in chapter two use in these chapter and calculate .The change and the compare is use to find the weak of company and improve their financial structure. The Dupont analysis is use different item to analysis the profit of Trina solar, each item has their own impact of the company's finance.

In this thesis, we use describe what does different method means and use it to analysis the finance of Trina solar, mainly to understand use which method to analysis which ability. From liquidity ratio we know the liquid is nut good in Trina solar, in 2010 to 2012 its non-flowing. The current ratio decrease to 0.99%in 2013, and quick ratio decrease to 0.81%, so the company need to improve the ratio of current assets and current liabilities. And the activities is not good in 2010 to 2012 but the managers of the company realized the problem, they begin to decrease the debt and pay attention to development in 2013 and 2014, so its activities begin to greater. The solvency ratio is the ability to pay for debt, we know this ability is improve in these five years, debt to assets is 44.95% to 68.71 and debt to equity is 81,66% to 269.61%. They can pay for their debt in times at these period of time. The company's profitable is bad in 2010 to 2013, it has less profit and influence its operating. The operating profit margin is the product we produce per unit and get the profit, if its too low,the company may not have revenue to meet capital. In the method we use, we find that Trina solar company has development quickly in these years, in the way of their development, they meet many problems, like the weak of operating capital. But its the challenge for Trina solar company, its begin to walking in the world in 2010 to 2014, and will have many chance to change their working capital. The financial analysis compare in five years makes the company's financial status we know clearly. They need to extent the capital of the company then has a great development.

Bibliography

[1] ROBINSON, THOMAS. R., GREUNING, HENNIE. VAN., HENNY, ELAINE., BROIHAHN, MICHAEL. A. *International financial statement analysis.* New York: John Wiley & Sons, 2015, 3rd ed, 784p. ISBN 978-0-470-28766-8.

[2] CLAUSS, FRANCIS. J. *Corporate financial analysis with Microsoft excel*. New York: McGraw Hill Professional, 2010, 489p. ISBN 987-0-071-62884-6.

[3] PETERSON, PAMELA. P. and FABOZZI, FRANK. J. *Analysis of financial statement.* New York: John, Wiley & Sons, 2013, 3rd ed, ISBN 978-1-118-29998-2.

[4] VANDYCK, CHARLES. K. *Financial ratio analysis: A handy Guidebook.* Victoria: Trafford Publishing, 2006, 184p. ISBN 978-1-425-10526-6.

[5] CLAESSENS, STIJN., LAEVEN, LUC. *A. reader in international corporate*. Washington DC: The world bank, 2006, 1st ed, 383p. ISBN 978-0-8213-6698-1.

Electronic bibliography

[6] Trina solar limited company's abstruct. [online]. [9.4.2016]. Available on: http://www.trinasolar.com/eu/about-us

[7] Trina solar limited company's annual report . [online][9.4.2016]. Available on: http: // www. Corporate -ir.net/Media_Files/IROL/20/206405/annual_report http://media. corporate -ir.net/media_files/IROL/20/206405/Trina Solar

List of abbreviations

EAT Earning after tax

EBT Earning before tax

EBIT Earning before interest and tax

ROA Return on assets

ROE Return on equity

Declaration of Utilization of Results from a Bachelor Thesis

Herewith I declare that

- I am informed that Act No. 121/2000 Coll. – the Copyright Act, in particular, Section 35 – Utilization of the Work as a Part of Civil and Religious Ceremonies, as a Part of School Performances and the Utilization of a School Work – and Section 60 – School Work, fully applies to my bachelor thesis;
- I take account of the VSB – Technical University of Ostrava (hereinafter as VSB-TUO) having the right to utilize the bachelor thesis (under Section 35(3)) unprofitably and for own use ;
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Ostrava dated: 20. 04. 2016

Xinran Wang 王新冉

Student's name and surname

List of annexes

Annexes :

Annex 1: Complete balance sheet of Trina solar Limited.(Millions of USD)

	2010	2011	2012	2013	2014
Current assets					
Cash and cash equivalents	752747	816779	807275	486685	392891
Restricted cash	38035	79602	110920	74719	146929
Investment in securities	295	0	0	0	0
Inventories	79126	249778	318503	244532	350851
Project assets	34979	8860635	7960	73304	60104
Accounts receivable	377317	466537	390157	435091	608149
Current portion of advances	81230	63492	57846	68252	46131
Deferred tax assets	10258	10466	12716	24202	25701
Other current assets	41149	73203	60107	114910	142586
Total current assets	1415139	1768721	1765487	1521700	1773346
Non current assets					
Advances to suppliers	93248	120144	86922	41907	20750
Property,plant and equipment	571466	919726	893340	889752	1253542
Prepaid land use right	37047	42848	41961	43286	48075
Project assets of portion	0	2902	23397	6096	0
Deferred tax assets	14667	19038	41047	50901	30977
Investment in equity affiliates	0	4066	10960	11769	25568
Other non current assets	520	0	1669	1813	47304
Total non current assets	716950	1101757	1064941	1027662	1400651
Total assets	2132089	2877448	2864856	2567229	3199565
Current liabilities					
Short term borrowing	159652	389472	875820	935589	820251
Accounts payable	188000	472091	423985	461147	742007
Amount due to related parties	668	6748	4861	15385	8088
Income tax payable	34156	4502	936	3268	9397
Other current liabilities	82328	134620	89968	125151	170057
Convertible notes	136262	0	83582	0	0
Total current liabilities	600069	1007435	1479154	1540543	1749802
Non-current liabilities					
Long term borrowing	299977	520150	415150	100502	22433
Convertible notes	0	127756	0	0	287500
Accrued warranty costs	38710	58810	65780	81743	103197
Other non current liabilities	19684	17970	22986	21961	35553
Total non current liabilities	358372	724687	503917	204207	448684
Total liabilities	958442	1732122	1983072	1744750	2198487
Shareholders' equity					

Additional paid in capital	642892	650944	656943	663387	752384
Retained earning	519770	481950	215395	143369	202706
Accumulated other income	11007	12190	9206	15402	17710
Total shareholders' equity	1173647	1145125	881584	822196	972843
Non controlling interest	0	199	199	282	28234
Total equity	1173647	1145325	881784	822478	1001078
Total liabilities and equity	2132089	2877448	2864856	2567229	3199565

Annex 2：Complete income statement of Trina solar Limited

	2010	2011	2012	2013	2014
Net sales	1857689	2047901	1296654	1774970	2286119
Cost of revenues	1273328	1715259	1239411	1556776	1900547
Gross profit	584361	332641	57243	218193	385571
Selling expenses	75677	100427	118885	132824	135060
General expenses	72710	157128	176719	103523	108150
Research expenses	18624	44120	26510	19926	22258
Income from operation	417348	30965	(264871)	(38080)	120102
Interest income	2590	3056	8551	3958	2793
Interest expenses	(33952)	(35020)	(51886)	(48444)	(34886)
Foreign exchange gain(loss)	(36155)	(27434)	907	(13575)	(21934)
Derivatives gain(loss)	9475	(11393)	8541	2180	3422
Other(expenses) income	215	9316	6797	8695	7250
EBT	359522	30510	(291960)	(85266)	(76747)
Tax	48069	(7309)	25405	13030	(15488)
EAT	311452	(37820)	(266555)	(72235)	61259
Non controlling interest	0	0	0	209905	(1921)
EBIT	311452	(37820)	(266555)	72025	59337